

CONTRIBUTORS TO VOLUME XI.

D. Hayes Agnew, Philadelphia, Pa.
 Edmund Andrews, Chicago, Ill.
 E. W. Andrews, Chicago, Ill.
 Robert H. Babcock, Chicago, Ill.
 Henry B. Baker, Lansing, Mich.
 J. R. Barnett, Neenah, Wis.
 Isador Bermann, Washington, D. C.
 Boerne Bettman, Chicago, Ill.
 Horatio R. Bigelow, Washington, D. C.
 S. S. Bishop, Chicago, Ill.
 I. W. Blackburn, Washington, D. C.
 C. V. Boarman, Washington, D. C.
 Alexander Boggs, Paris, France.
 C. S. Bond, Richmond, Ind.
 Nathan Bozeman, New York City.
 E. H. Bradford, Boston, Mass.
 Wm. C. Brittan, Detroit, Mich.
 Daniel R. Brower, Chicago, Ill.
 Bedford Brown, Alexandria, Va.
 J. W. Brown, Mottville, N. Y.
 J. M. Young Brown, Henderson, Ky.
 J. Buchanan, Pittsburgh, Pa.
 Duncan Bulkley, New York City.
 James Burry, Chicago, Ill.
 Daniel C. Busey, Washington, D. C.
 S. Campbell, Detroit, Mich.
 I. G. Carter, Waukegan, Ill.
 W. Cheatham, Louisville, Ky.
 Julian J. Chisolm, Baltimore, Md.
 Augustus P. Clarke, Cambridge, Mass.
 W. Franklin Coleman, Chicago, Ill.
 P. S. Conner, Cincinnati, Ohio.
 G. Wythe Cook, Washington, D. C.
 William T. Corlett, Cleveland, Ohio.
 J. D. Cowden, Rock Island, Ill.
 H. Colbertson, Zanesville, Ohio.
 J. S. Dorsey Cullen, Richmond, Va.
 Ephraim Cutter, New York City.
 I. N. Danforth, Chicago, Ill.
 N. S. Davis, Jr., Chicago, Ill.
 N. S. Davis, Sr., Chicago, Ill.
 T. D. Davis, Pittsburgh, Pa.
 H. D. Didama, Syracuse, N. Y.
 B. A. Duncan, West Point, Miss.
 Chas. Warrington Earle, Chicago, Ill.

Robert T. Edes, Washington, D. C.
 Wm. G. Eggleston, Chicago, Ill.
 Joseph Eichberg, Cincinnati, Ohio.
 Llewellyn Eliot, Washington, D. C.
 Rosa H. Engert, Chicago, Ill.
 Orpheus Everts, College Hill, Ohio.
 Christian Fenger, Chicago, Ill.
 Geo. E. Frothingham, Ann Arbor, Mich.
 J. McFadden Gaston, Atlanta, Ga.
 H. Landis Getz, Marshalltown, Iowa.
 Albert L. Gihon, U. S. Navy.
 William Goodell, Philadelphia, Pa.
 S. C. Gordon, Portland, Me.
 H. Gradle, Chicago, Ill.
 H. H. Grant, Louisville, Ky.
 B. M. Griffith, Springfield, Ill.
 S. W. Gross, Philadelphia, Pa.
 Rufus B. Hall, Cincinnati, Ohio.
 John B. Hamilton, U. S. Marine Hospital Service.
 Geo. Byrd Harrison, Washington, D. C.
 J. F. Hartigan, Washington, D. C.
 M. P. Hatfield, Chicago, Ill.
 Morris H. Henry, New York City.
 F. C. Hotz, Chicago, Ill.
 J. L. Hillmantel, Chicago, Ill.
 Hunter H. Howell, Cleveland, Ohio.
 E. Fletcher Ingals, Chicago, Ill.
 D. B. Ingersoll, May's Landing, N. J.
 Samuel K. Jackson, Norfolk, Va.
 W. W. Jaggard, Chicago, Ill.
 J. F. Jenkins, Tecumseh, Mich.
 R. B. Jessup, Vincennes, Ind.
 Jos. Taber Johnson, Washington, D. C.
 A. W. Johnstone, Danville, Ky.
 George Wheeler Jones, Danville, Ill.
 Joseph Jones, New Orleans, La.
 J. H. Kellogg, Battle Creek, Mich.
 T. C. Kennedy, Shelbyville, Ind.
 Ernest F. King, Washington, D. C.
 Charles W. Kollock, Charleston, S. C.
 J. A. Larrabee, Louisville, Ky.
 Benjamin Lee, Philadelphia, Pa.
 Elmer Lee, St. Louis, Mo.
 Léon Leibowitz, Vienna, Austria.
 J. Berrien Lindsley, Nashville, Tenn.

MEDICAL SOCIETIES.

Henry M. Lyman, Chicago, Ill.
 Ely McClellan, U. S. Army.
 Hunter McGuire, Richmond, Va.
 James J. McKone, Washington, D. C.
 Donald MacLean, Detroit, Mich.
 L. S. McMurtry, Danville, Ky.
 Henry O. Marcy, Boston, Mass.
 H. C. Markham, Independence, Iowa.
 John S. Marshall, Chicago, Ill.
 Philip Marvel, Washington, D. C.
 George O. Meade, London, England.
 A. H. Meissenbach, St. Louis, Mo.
 Geo. N. Monette, New Orleans, La.
 E. M. Moore, Rochester, N. Y.
 H. H. Mudd, St. Louis, Mo.
 J. H. Mundell, Washington, D. C.
 P. J. Murphy, Washington, D. C.
 William H. Myers, Ft. Wayne, Ind.
 A. W. Nelson, New London, Conn.
 S. N. Nelson, Boston, Mass.
 Robert Newman, New York City.
 John North, Keokuk, Iowa.
 William Osler, Philadelphia, Pa.
 Charles B. Peurose, Philadelphia, Pa.
 Max von Pettenkofer, Munich, Germany.
 H. Sterling Pomeroy, Boston, Mass.
 Miles F. Porter, Ft. Wayne, Ind.
 P. Brynberg Porter, New York City.
 William Porter, St. Louis, Mo.
Joseph Price, Philadelphia, Pa.
 Arthur E. Prince, Jacksonville, Ill.
 Chas. W. Purdy, Chicago, Ill.
 Joseph Ransohoff, Cincinnati, Ohio.
 Chas. A. L. Reed, Cincinnati, Ohio.
 C. R. Reed, Middleport, Ohio.
 R. Harvey Reed, Mansfield, Ohio.
 W. W. Reeves, Wills Point, Tex.

Dudley S. Reynolds, Louisville, Ky.
 B. Merril Rickets, Cincinnati, Ohio.
 Irving C. Rosse, Washington, D. C.
 W. Byford Ryan, Willow Branch, Iowa.
 J. E. Schadle, St. Paul, Minn.
 W. L. Schenck, Osage City, Kans.
 John V. Shoemaker, Philadelphia, Pa.
 Howard Smith, Charlestown, Mass.
 Jos. R. Smith, U. S. Army.
 Thomas C. Smith, Washington, D. C.
 Frederick Sohon, Washington, D. C.
 D. A. K. Steele, Chicago, Ill.
 D. R. Stubblefield, Nashville, Tenn.
 E. S. Talbot, Chicago, Ill.
 Lewis H. Taylor, Wilkesbarre, Pa.
 J. D. Thomas, Pittsburgh, Pa.
 F. Watson Todd, Stockton, Cal.
 J. M. Toner, Washington, D. C.
 Lawrence Turnbull, Philadelphia, Pa.
 W. C. Van Bibber, Baltimore, Md.
 Ely Van de Warker, Syracuse, N. Y.
 Weller Van Hook, Chicago, Ill.
 Carl H. von Klein, Dayton, Ohio.
 John P. Wall, Tampa, Fla.
 S. H. Weeks, Portland, Me.
 Edward F. Wells, Shelbyville, Ind.
 D. Emmett Welsh, Grand Rapids, Mich.
 Kent K. Wheelock, Ft. Wayne, Ind.
 H. M. Whelpley, St. Louis, Mo.
 T. J. Whitten, Nokomis, Ill.
 D. M. Wick, New Hartford, Iowa.
 William C. Wile, Danbury, Conn.
 E. A. Wood, Pittsburgh, Pa.
 John W. Wright, Columbus, Ohio.
 T. L. Wright, Bellefontaine, Ohio.
 H. B. Young, Burlington, Iowa.
 Geo. J. Ziegler, Philadelphia, Pa.

MEDICAL SOCIETIES.

Academy of Medicine of New York.
 American Academy of Medicine.
 American Ophthalmological Society.
 American Otological Society.
 American Surgical Association.
 British Medical Association.
 Chicago Medico-Legal Society.
 Congress of American Physicians and Surgeons.
 Gynæcological Society of Boston.
 Gynæcological Society of Chicago.
 Massachusetts Medical Society.

Medical Society of the District of Columbia.
 Medical Society of Virginia.
 National Convention of Charities and Corrections.
 New York County Medical Association.
 New York State Medical Association.
 New York State Medical Association—Fifth District Branch.
 Obstetrical Society of Philadelphia.
 Philadelphia County Medical Society.
 Suffolk District Medical Society.

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 7, 1888.

No. 1.

ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECT.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY R. HARVEY REED, M.D.,
OF MANSFIELD, OHIO.

In the study of "intestinal obstruction," we shall endeavor to confine ourselves, as far as possible, to the consideration of two general conditions.

1. Pseudo-obstruction.
2. Veracious obstruction.

By pseudo-obstruction of the intestinal tract, we mean a paralytic condition, presenting the symptoms of a real obstruction without any such obstruction existing, either ante-mortem or post-mortem.

By veracious obstruction, we mean a literal obstruction of the intestinal canal capable of verification, either ante-mortem or post-mortem.

To prove that these two general conditions do exist, both *ante-mortem* and *post-mortem*, will be the aim of the author, in this paper, by the collection of a few cases, and so far as possible demonstrating the above propositions by actual specimens.

PSEUDO-OBSTRUCTION.

In November, 1883, I was called to see Mr. M., a strong, muscular, contractor, who had reached about middle age, but had always been, and was at the time he was taken sick, an unusually robust, active fellow. After arriving at his bedside, I learned that three days previous, he was taken suddenly ill with a "severe pain in the right side" as they called it, but which in reality, was in the iliac fossa. I also learned that he had had a physician who diagnosed some "liver trouble."

When I reached him, which was only two or three hours prior to his death, I found him complaining of excruciating pain in the right iliac fossa. Extremities were cold; abdomen very much distended, and tender over the whole lower and right side; stercoraceous vomiting and extreme constipation; bowels had not moved at all

subsequent to his illness, notwithstanding repeated efforts with drugs and by enemata.

A careful examination failed to discover any localized enlargement, which, had it existed, would have been difficult of detection, owing to the great distention of the abdomen, and the pain and tenderness.

I did not feel clear in my diagnosis, but ventured to tell the friends that in my opinion the whole difficulty was located at some point in the intestinal tract, near the right iliac fossa, but owing to his rapidly increasing collapse (at the time of my first and only visit), all efforts at relief were certainly useless.

A post-mortem examination was made eight hours after death, in the presence of a number of physicians, of Mansfield, O., which revealed an acute typhlitis with perforation, peritonitis, and death. I also found a very high degree of acute congestion of both lungs, which were almost one mass of blood.

There was no real obstruction of any kind in the intestinal tract, the lumen of the entire bowel being free from one end to the other, notwithstanding he had had all the ordinary symptoms of acute obstruction, followed with perforation and peritonitis of a violent type.

In April, 1885, I was called in counsel on a case, which I reported to this Association at its thirty-seventh annual meeting, under the title of "Some of the Complications of Strangulated Hernia," which aids us in demonstrating the fact that we do occasionally have pseudo-obstruction, with all the symptoms of true obstruction of the intestinal tract. With your forbearance I will briefly mention this interesting case in that connection.

The case occurred in a young man of 30 years, with a vigorous constitution, and a fully developed muscular system, who had not only had a hydrocele, but also a complete inguinal hernia on the right side; the former I tapped, and the latter was reduced with little or no difficulty. I found, however, that the symptoms of intestinal obstruction continued, with all the horrors of stercoraceous vomiting and complete constipation, which after repeated consultations, led to the opinion that some form of intestinal obstruction existed, and must be relieved by surgical interference, or death would surely result.

My friend, Dr. J. W. Craig, who had been called in council on the case, performed the laparotomy, assisted by myself, his son, Drs. J. H. Craig and George P. Sattler, which revealed the fact that the "ascending colon had been dragged down farther than usual, until the lower end of the vermiform appendix had escaped through the femoral ring and became strangulated at a point where it passed Gimbernat's ligament. When released it was found to be swollen to the size of a man's thumb, and very much discolored."

No obstruction whatever was found to exist in the intestinal tract proper, notwithstanding the persistent vomiting of faecal matter for four days prior to the operation, and our inability to get a motion from the bowels by either copious enemata or legitimate medication.

The intestines were cleansed with a 1 to 3,000 bichloride solution and returned, and the abdominal wound closed; the patient recovering without a single bad symptom, and has been well as usual ever since, the author having seen him only a few weeks ago. In April, 1887, I was called in council with Dr. Jeffries, of Greenwich, Ohio, in the case of a vigorous young man of 17 years, who was suddenly taken ill about four days before with vomiting and a severe pain in the stomach, with no history of a chill. The attending physician, Dr. Jeffries, reported a pulse of 70, not associated with any fever; patient was given a dose of oil, without any results; said he complained of severe pain in the ileo-cæcal region, with tenderness on pressure, which extended more or less over the entire abdomen; could not lie on his left side; persistent constipation, notwithstanding he was given copious injections of warm water; pulse becoming weak and thready, and pain increasing with abdominal distention. The diagnosis of typhilitis was made, and owing to the alarming symptoms Dr. Sykes and son, of Plymouth, were sent for, who, after examination, confirmed the above diagnosis.

On the afternoon of the fourth day of his illness, the author was sent for, arriving there in the evening, and found the patient vomiting faecal matter, and in a state of apparent collapse, with all the symptoms of acute intestinal obstruction, with perforation, and peritonitis. After receiving the above brief history, and making a careful physical examination, I formed the opinion that he had an obstruction in the region of the ileo-cæcal valve, and suggested the advisability of an operation for his relief, had the case been seen in time; but that owing to his collapsed condition, I did not think an attempt at surgical relief advisable at the present time, as I thought he could not certainly survive over a few hours at most.

To our surprise, however, he lived through the night, and the following morning had rallied considerably; pulse was stronger and extremities

warmer. He begged piteously for an operation, as did his friends, saying that he couldn't *more* than die, and if it gave him the only chance for recovery, he wanted that chance even if he should die in the attempt.

With no small degree of hesitancy, I prepared for the operation, which I feared would be not only useless under the circumstances, but in all probability fatal. Dr. Jeffries gave him the anæsthetic which he took with little or no trouble. The abdomen was carefully cleansed with a 1:3000 solution of the bichloride of mercury.

An incision was made in the median line, midway between the umbilicus and the pubes, carefully directing up with a grooved director the various layers until we reached the peritoneum.

During this period I observed the pulse at times becoming irregular, and the breathing spasmodic, notwithstanding he had been given stimulants and digitalis by hypodermic injections prior to the operation; yet I determined to go on, as I was still firmly of the belief that what I had commenced as an operation would end as a post-mortem. No sooner had I opened the peritoneum, than he collapsed, a few gasps, a slight tremor of the pulse, and the post-mortem was at hand.

Having already arranged for that with his friends, I proceeded at once with the autopsy, which revealed extensive peritonitis with immense exudations of lymph, which had glued the bowels together almost their entire length, and at the same time, pasted them firmly to the peritoneum. A diligent search and careful examination failed to discover the least obstruction to the intestinal tract, the lumen of the bowel being free and open from one end to the other.

In the vermiform appendix, however, was found a calculus about the size of a hazel-nut, in which was a nucleus which I am inclined to believe is a small gall-stone, around which the calcareous laminæ have gathered until the concretion became so large, and produced so much irritation as to ulcerate through the appendix, and allow extravasation into the peritoneal cavity with all its fatal results.

You will observe by examining the specimen, which I shall pass around, that there is a distinct nucleus, and from the laminated character of the calculus we are inclined to the opinion that it was of slow formation. By examining the vermiform appendix and the lower end of the cæcum, which I will also pass around for examination, you will observe the appendix is enlarged to more than ten times its normal size. The bulged appearance just below the end of the cæcum is where I found the calculus imbedded, while a little lower down, you will observe the small opening into the peritoneal cavity. The cæcum, ileo-cæcal valve, colon, and small intestines, were all normal with the exception of the inflammatory products above referred to.

REMARKS.—In each of the above cases we had all the ordinary symptoms of intestinal obstruction, such as a sudden attack with localized pain, constipation with a desire to go to stool, which was followed with no results; stercoraceous vomiting, tympanitis, and in the two cases which were not relieved by surgical interference, collapse, and death, and yet in not a single case was there any real obstruction existing in the intestinal tract proper.

Morris, in Vol. V of the "International Encyclopædia of Surgery," page 993, refers to a few cases of foreign bodies in the appendix vermiformis, and speaks of the symptoms "simulating hernia" and "being suggestive of intestinal obstruction," which, to a certain extent, confirms the proposition we have taken, that we do have pseudo-intestinal obstruction, or, rather we have affections of the vermiform appendix, giving rise to a series of symptoms so clearly allied to those of true obstruction of the intestines, that it is with great difficulty, if at all, we are able to diagnose during life, without an exploratory incision into the abdominal cavity, between the true and false obstruction occurring along the intestinal tract.

In this class of cases we undoubtedly have a localized paralysis of the muscular walls of the intestine arresting the peristaltic action of the bowel, and thus forming "a block" as it were, to the free movement of its contents, which for the time being, acts as an obstruction even in cases in which the intestine is only partially filled with fecal matter, the walls of which lose their elasticity and collapse, and thus we can account for the stercoraceous vomiting occurring in these cases, as well as the extreme constipation.

The difficulty of diagnosing between these cases, and those of complete veracious obstruction is at once apparent. In both there are localized pain and tenderness; in both, stercoraceous vomiting; in both, extreme constipation; in both you may have peritonitis with collapse and death.

In pseudo-obstruction, however, we usually find the symptoms of inflammation preceding those of obstruction, while in veracious obstruction you usually have the symptoms of obstruction preceding those of inflammation.

In pseudo obstruction, we usually find localized pain without any distinct tumor, whilst in veracious obstruction, we usually find a distinct tumor in addition to the localized pain.

If the intestine is inflated by hydrogen gas as devised by Prof. Senn,¹ of Milwaukee, in the pseudo form of obstruction, there will be no difficulty in obtaining a free passage through the entire bowel, and obtain the gas from the stomach by means of a stomach tube; whilst in complete

veracious obstruction this will not only be impossible, but the intestine will be found to inflate to the point of obstruction and no farther. If, on the other hand, we have pseudo-obstruction, the result of a peritonitis from perforation, this most admirable method of gaseous inflation, devised by Prof. Senn, will at once enable us to diagnose this fact.

By the use of the hydrogen gas *per rectum*, it will be found that by puncturing the abdominal walls with an exploring trocar, being exceedingly careful not to puncture the bowel, that if there is a perforation of the bowel, the gas will escape through the trocar, and be easily ignited, which would not be the case if there is no perforation.

VERACIOUS OBSTRUCTION.

The frequency of true obstruction of the intestinal tract, and the dangers it subjects its victims to, are of such grave importance as to demand of the surgeon the most careful study of this vitally important question. That these obstructions, of whatever class, are of a mechanical nature is without question, and that they can be relieved by proper surgical assistance in a large majority of cases if taken in time, is also just as true.

It is to be lamented that we still have physicians of unquestioned skill who advocate the old opium and purgative plan of expectant treatment of these obstructions, and discourage the use of the knife except as the last resort, when the patient is exhausted by days of excruciating pain, or on the verge of fatal collapse from purulent peritonitis, or dying from the shock and inflammation incident to a perforation of the bowel, and then they condemn operative interference as useless and barbarous because it fails to save the life of one who is practically moribund before the surgeon is allowed to operate. It is true they have a case now and then when there is complete intestinal obstruction in which nature has stepped in and did the surgery for them and saved their patient.

In this connection I desire to report a case that not only shows what nature *will* do, but which at the same time demonstrates the principles we shall advocate for the prompt repair of intestinal obstruction, with possibly a few modifications on nature's original plan.

About the middle of May, 1886, the author was called in council with Dr. George P. Sattler, of Pavia, Ohio, in the case of Mrs. H., who had been suffering from intestinal obstruction for six days prior to my visit. From the Doctor and the family I learned that on the night of the 12th of May she was seized with "pain in the epigastric and umbilical regions," which was of a paroxysmal character, which steadily increased in severity, and was soon followed with vomiting, without any motion of the bowels.

The patient informed me she had been engaged the day before putting up an ash-leach, and had

¹ The particulars as to this method of diagnosis have been kindly given me by Prof. Senn, of Milwaukee, who will furnish this Association all the details of his method of diagnosis in perforation of the bowel in a paper already prepared for this Section.

been lifting bucketfuls of ashes nearly as high as her head, but felt no inconvenience from it, excepting when she was in the act of lifting one bucketfull she felt a little pain in her side, as she expressed it, and supposed she had wrenched herself, but paid no further attention to it and went on with her work.

Dr. Sattler informed me that "there was at no time any localized tenderness, pain, or swelling," but that on the fourth day "general peritonitis" had set in, which "was accompanied by stercoraceous vomiting and occlusion of the bowels," which he located "somewhere in the lower half of the ileum."

After a careful examination of the case I advised an operation; although at my visit I found so much tenderness and tympanites that I could not locate the point of obstruction, yet I felt morally certain it existed, and considered an operation the right thing to do. There being some hesitancy on the part of the friends, as well as the Doctor, as to an operation, we left with the understanding that they would make another effort at moving the bowels and if that failed they would consider the advisability of an operation.

After diligent efforts at removing the obstruction for three days more without success, they called Dr. J. W. Craig, of Mansfield, O., to see her in consultation with the family physician, who advised making "another effort to overcome the obstruction by medication, and if that did not have the desired effect to operate within twenty-four hours."

A few hours later, however, some fecal matter was passed, *per rectum*, "during a violent fit of vomiting," and "from that time forward her condition gradually improved." "On the 20th day of her illness, while in the act of defecation, she passed a section of the ileum about 6 or 8 inches in length," which "when first seen was still telescoped."

I am indebted to Dr. Sattler for this specimen, which I have the pleasure of showing you to-day, as well as the general history and report of this interesting case. You will observe that a portion of the mesentery was passed with the intestine, which is attached to the latter in numerous places by bands of adhesions, while the ends of the intestine are oblique and present a ragged and tattered appearance.

The patient gradually improved and is still living, but never regained her usual degree of health.

In June, of the same year, Dr. Sattler had a similar case of intestinal obstruction in a male, aged 65 years, who, after twenty days of intense suffering with stercoraceous vomiting and constipation, was relieved by passing a portion of the bowel, which came away in shreds, one of which the Doctor procured and has kindly given me for exhibition at this meeting, but which has become so contracted from being in alcohol, which finally

evaporated and allowed the specimen to dry up in the manner you see it at present.

In these two cases of veracious obstruction of the intestinal tract we have an example of what nature will occasionally do when not relieved by art, and at the same time we have a practical demonstration of the principles of Prof. Senn's method of uniting the ends of an intestine by the rubber-ring method.

In these cases the intussusceptum undoubtedly acted the part of the rubber ring to the intussusciens by becoming swollen, and in this way holding the two serous surfaces together until union took place, when the lower portion of the intussusceptum became gangrenous and sloughed off and was passed just as the rubber ring is—*per rectum*.

It is true there should be a liberal degree of conservatism practiced in all these cases before laparotomy is resorted to, and all possible complications carefully studied and their importance duly considered. I was forcibly impressed with this idea of conservatism a few days ago while assisting in a post-mortem examination on an old man who had died of carcinoma of the liver, which during his lifetime had had marked symptoms of obstruction of the bowel.

His attending physician, Dr. J. S. Stewart, of Ontario, O., informed me he had diagnosticated obstruction located on the right side at the juncture of the ascending and transverse colon, some months prior to his death which he was inclined to think came from impaction of the feces, and which, after a few days, was relieved, although he frequently complained of pain in that region.

The post-mortem examination revealed a cancerous liver, which had become so enlarged as to reach almost to the iliac fossa on the right side, and more than half way to the iliac fossa on the left side, pushing before it the transverse colon, producing an U-shaped condition of the colon, with an acute angle on the right side and a subacute angle on the left side. On the right side that portion of the transverse colon which was pushed down parallel to the ascending colon was completely adherent to the latter for about 8 inches, making in all 16 inches. It was at the acute angle where the temporary obstruction was lodged, no doubt producing the inflammation and adhesion found at the autopsy.

I recognize in this case, which at the time of the obstruction was not suspected of having a cancerous liver, a mechanical condition producing obstruction in which little benefit could occur from operative interference, as it would have required the switching off of at least 16 to 18 inches of the colon by Prof. Senn's decalcified bone plate operation, which in a patient of over 70 years of age, with more or less of a devitalized condition, would have certainly proved fatal, saying nothing of the enlargement of the liver.

On the other hand I have a specimen I obtained at a post-mortem examination I held on Mr. E. P., age 72 years, in which I was assisted by Dr. J. Harvey Craig, of Mansfield, O., which you will observe is an old, irreducible inguinal hernia, in which the sac has become enormously thickened and attached in many places to the loop of intestine, which is so constructed at the neck of the sac as to have materially impaired the circulation of the contents of the intestine, which at different times threatened obstruction, but which happily passed off without any serious results.

Here is a case in which the ordinary operation for the radical cure of hernia would have been attended with great danger if it had not proved a complete failure altogether, owing to the numerous adhesions; yet it would have been a suitable case for the Senn decalcified bone-plate operation, and thus have sidetracked the loop of intestine contained in the hernial sac, and allowed it to have undergone physiological atrophy. Permit me to say, that the subject from which this specimen was taken died from a disease in no way connected with this old hernia.

CONCLUSIONS.

From a study of these few cases that have come under my personal observation, in their relation to intestinal obstruction, I have come to the following conclusions:

A.—1. That we do have pseudo-obstruction of the intestinal tract in which all the symptoms of true intestinal obstruction exist, without any real obstruction being present.

2. That all these cases will result fatally if not relieved.

3. That surgical interference is not only the rational, but the safest and surest means of relief.

B.—1. That in veracious obstruction of the intestinal tract we may have spontaneous recovery in rare instances, attended with painful, prolonged, and dangerous illness.

2. That there are occasionally circumstances occurring where there is mechanical obstruction with certain complications in which operative interference would be useless, and not only hazard the life of the patient, but undoubtedly shorten his days.

3. That there are mechanical obstructions of the intestinal tract that cannot be relieved except by surgical interference.

The author would recommend an operation at the earliest possible moment after the diagnosis of intestinal obstruction is made, in the firm belief that delays are not only dangerous, but hazardous, in the majority of cases.

As to the methods of operation, I would recommend the rubber ring, modification of Jobart's method, devised by Prof Senn, of Milwaukee, as the safest where it is necessary to make a resection or excision of a portion of the intestinal tract.

And where an excision is not necessary (and under certain conditions where excision is necessary) the decalcified bone-plate method as devised by Prof. Senn, is advised, by which a portion of the intestine can be "switched off," as it were, by opening a new channel between the upper and lower portion of the bowel and thus allow the "sidetracked" portion of the intestine to atrophy from disuse, while the contents of the bowel proceeds on its way through the artificial opening.

In purulent peritonitis, with pseudo-obstruction of the bowel, the opening and washing out of the abdominal cavity is unquestionably the proper thing to do, while in the same condition from veracious obstruction it is imperative in connection with the removal of the obstruction proper.

In all operations in the abdominal cavity we would recommend the strictest antiseptic precautions, which combined with the earliest operative interference possible in cases of intestinal obstruction, and the improved methods of operating, as devised by Prof. Senn, we are of the firm conviction that the mortality in this class of cases can be very decidedly diminished.

May 3, 1888.

THE NERVOUS RECTUM.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY WILLIAM GOODELL, A.M., M.D.,

PROFESSOR OF GYNECOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

Hysteria is closely allied to insanity, and as the latter frequently manifests itself by a single delusion, while the mind remains clear on all other subjects; so hysteria often exhibits itself chiefly by some localized disorder. It then explodes externally and billets itself on certain muscles or on certain sets of muscles, forming, as it were, a sort of muscular insanity. The mind is sane, the organic body is sound, the individual, as a whole, is above reproach, and yet these muscles will behave as if they were bereft of reason. Few muscles are exempt from the attacks of hysteria, and thus are formed hysterical paresis and anaesthesia, hysterical aches and jerks, and those hysterical grimaces of expression or of locomotion with which all of us are familiar.

The muscles most liable to become hysterical are, perhaps, the circular ones, viz., the sphincters of outlets or inlets, and while the insanity, so to speak, is more localized, the sufferings are perhaps greater. Thus by a lack of nerve coördination in single muscles of this kind come irritable bladder, painful coition, asthma or dyspnoea, loss of voice, vomiting or regurgitation of food, difficulty in swallowing, dysmenorrhoea and palpitations of the heart. Much might be said on all these subjects, for the field is a wide one; but I

shall restrict myself to-day to the consideration of the hysterical rectum.

In this form of hysteria there are usually present, in my experience, some one of the protean symptoms of general nerve prostration, such as spineaches and backaches, sore ovaries, weariness, wakefulness and nervousness. But the chief suffering, or the most exacting symptom, is referred to some portion of the rectal tract, leading the physician to suppose that he is dealing with some coarse or traumatic lesion. When leading nerve-symptoms are absent it is not always easy to unmask these nerve counterfeits of rectal disease. But the careful observer will note an irregularity of pain in the hysterical affection, an indescribable affectation of suffering, and a lack of consistency in the behavior of the symptoms.

In one form of hysteria localized in the rectum, spasm of the sphincter takes place, and the nerves are so acutely sensitive that the symptoms mimic those of an anal fissure. The act of defecation then gives great suffering, followed by a painful throbbing which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness, and often become victims to opium eating. Sometimes the site of the rectal pain lies higher up than the sphincter muscle, and is irrespective of the act of defecation. It then is liable to show periodicity in its character, coming on at regular hours of the day, probably from the periodicity with which the accumulation of feces in the lower bowel takes place. Another form is a throbbing and pulsating pain while the rectum is loaded, and a sickening pain during defecation. These two last forms of rectal suffering are often, although not always, dependent on prolapsed and tender ovaries, over which the hardened feces grate. In one of my cases an opium-eater, reduced to the last degree of weakness and emaciation, being in fact merely a bundle of skin and bones, rectal enemata, or the presence merely of feces, kindled up sexual throbs of the most painful and exhausting character, which thrilled through the whole body for hours at a time. She was cured by the removal of the tubes and of the ovaries, which were diseased. A neurotic coccyx, causing coccygodynia, will evoke some of the foregoing symptoms; but the diagnosis can be readily made by introducing the index finger into the anus and by placing the thumb on the coccyx, where that bone can be grasped between them and moved to and fro.

All the preceding forms of the nervous rectum are associated with pain; but there are sheer hysterical ones, which are by no means uncommon, and in which the rectum behaves as if it had wholly lost its wits. In some women the sphincter ani becomes so strong by unnatural exercise, and is so powerfully contracted by tonic spasm, that despite the most active cathartic, this last

muscular barrier cannot be overcome unless an enema be given, or unless the finger be passed into the vagina, hooked over the sphincter and pulled strongly downwards. This adds to the *vis a tergo* and everts the anus. One of my patients who has lately had a relapse, although her sphincter ani has been cut by another surgeon and over-stretched by myself, describes the spasm of this muscle as a "ring of iron," through which she can barely insert the smallest nozzle of a syringe. I have repeatedly met with cases in which stricture of the rectum was so exactly counterfeited that the feces were expelled either in the form of thin flat ribbons, or in small round pellets like the dung of sheep or of goats.

In many women the act of defecation is not accompanied by pain, or by any local inconvenience whatever, the function being perfectly natural. Yet there will follow it great exhaustion, sometimes amounting in degree to a collapse, from which it will take hours for the patient to recover. The pranks which a nervous rectum will sometimes play are amusing and yet very annoying. I know of a lady who is actually kept a close prisoner by an apparently very jealous rectum. At home and in indoor dress, this lady is well and at ease. But if she dresses to go out, her rectum begins to grumble audibly, and, just as soon as her hat is put on, it starts up painful tenesmus and repeated stools, which do not cease until she uncovers her head and resumes her household duties. One lady could not get her bowels moved unless she stood erect, and the inconvenience of such a posture was of course very great. Being practically bed-ridden from nerve-prostration and from neuralgic and prolapsed ovaries, she was sent to me to have oöphorectomy performed on her. But by massage, electricity and rest she became well and is now, as she lately wrote, able to dance all night and take a walk of three miles the next day. A lady, who was under my care for nerve prostration, could not receive a letter from her husband without having so urgent desire to go to stool, that she had to postpone reading it until she had first responded to the rectal call.

One of my patients was compelled to go to the water-closet whenever a visitor was announced. Another one was affected in like manner upon any emotional excitement. For instance, when Garfield died, the report reached our large cities shortly after midnight, and was cried out in the streets by the policemen and watchmen on duty at that hour. The news thus conveyed awakened my patient out of a sound sleep, with the result that she had an involuntary evacuation and soiled her bed. In some cases the rectum is so irritable that urgent tenesmus is at once aroused, as soon as the feces descend low enough to enter it. This causes repeated and sudden evacuations, which are usually painful, and always unseasonable.

These cases cannot use enemata of any kind, for either the entrance of the nozzle gives too much pain to be borne, or the fluid, as fast as it is injected is forced out along the sides of the nozzle. In other cases the rectum is too emotional, and the lady is obliged to forego all social pleasures on account of rectal tenesmus produced by any kind of excitement, which either causes the escape of wind or creates an uncontrollable desire to evacuate the bowels. These annoyances make them very morbid on the subject, and they think and talk of hardly anything else.

There is yet another form of disease, which I think may be classified under the general heading of nervous rectum, although its pathology is by no means yet fully determined. I refer to pellicular colitis, or pseudo-membranous enteritis, as it is usually termed, in which mucous casts of the lower bowel are discharged with much tenesmus and abdominal pain, either by themselves or in the regular evacuations. I have repeatedly met with this form of intestinal trouble, and I have so invariably found it in hypochondriacal or in hysterical patients that I am disposed to look upon it as a sheer neurosis. That is to say, it is as much a nervous affection as shingles, pruritus, urticaria and other eruptions or cutaneous manifestations of disordered innervation. Patients who have this affection are perpetually talking about it, perpetually examining their evacuations, and are prone to search for and save the membranous casts for the inspection of their friends or of their physician. Nor have I ever seen this disease among the ignorant and the unrefined. It is, in my experience, a disease peculiar to well educated and emotional women of high intelligence, who have some degree of nerve-prostration.

The treatment of a nervous rectum depends largely upon the general condition of the patient. If she have nerve-prostration, as she usually will, failure will attend every effort to cure the rectal disorder, unless the former is successfully treated. The very best general treatment for this condition of the nervous system is that devised by Weir Mitchell, which I have described in detail in the last (3rd) edition of my "*Lessons in Gynecology*," under the heading of "*The Nerve-Counterfeits of Uterine Disease*." It consists of prolonged rest in bed, of seclusion from friends, of nutrition, of massage and of electricity. The therapeutic advantages of the first three agents are self-evident, and they need no explanation. But the last two are equally important. They pleasantly stimulate into action the vaso-motor nerves, and the terminal filaments of cutaneous nerves. They also exercise the muscles without volition on the part of the patient, and, therefore, without expenditure of nerve force. Now this is a very important item in the treatment, for all voluntary muscle-work is nerve-work, and the

nerve-capital in these cases is too small to be drawn upon. Percussion, made by quick strokes with the ulnar margin of the palm of the hand, or with a wet towel, or with two rubber balls mounted on whalebone stems, temporarily stuns the nerves; and these surprises effects molecular changes, by which lax fibre and tissues of loose consistency are strengthened. Again, both massage and electricity raise the body temperature, stimulate the nervous system, promote the secretions and increase the peristaltic action of the bowels. Also, the new and sharp impressions of electricity intrude upon and break up the mental attitude of morbid concentration on the pseudo-neuralgic pains of the rectum, and on its embarrassing eccentricities.

Thus these two agents not only act as antidotes to the evils which come of prolonged rest, but they meet several important indications. Further, as in these cases of nerve prostration there is disturbed circulation as well as enfeebled and disturbed innervation, it follows that, when a pathological process is set up by an increased flux of blood or flux of nerve fluid to an organ, whatever tends to lessen the amount of this overflow tends to restore that organ to health. Now, both electricity and massage increase surface circulation in the large vascular district of the skin; they flush its shallow arterioles. Again, by irritation of vaso-motor nerves, they also produce reflex changes in the circulation and in the innervation of deeper parts. But increased capacity in one vascular district causes lessened capacity in another. Hence the flux of blood and of nerve fluid is diverted from the congested organ, viz.: the rectum, and the amount of its circulation is lessened to a great degree. In all my cases, the interrupted current was most commonly used, the galvanic current being reserved for stubborn and deep-seated pelvic pains. It is interesting to watch how very surely, under this treatment, the rectal pain or other nerve pain is slowly extinguished.

But, in addition to the foregoing constitutional treatment, the rectal trouble itself needs supervision and special attention. When the patient complains of great exhaustion after a movement of the bowels, it is well to manage it so as to get the bowels opened just before bedtime. This can be accomplished either by an enema given an hour before bedtime, or by laxatives taken late in the day. In this way, the exhaustion being repaired by sleep and by a whole night's rest, the patient wakes up the next morning refreshed, and keeps refreshed until evening. A full dose of a bromide, or a stimulant, taken shortly before the bowels act, will also answer very well. Sometimes the exhaustion is best met by the use of the bed-pan, by which the recumbent posture is maintained, and the equable circulation of the blood is not interfered with. Of course, as the patient im-

proves in health and strength, this symptom gradually disappears. When the nerve symptoms counterfeit those of anal fissure, they are to be treated in precisely the same way as the latter. Suppositories of iodoform or of antipyrin will be found of benefit; but, these failing, the best treatment is that of overstretching the sphincter ani. This operation is usually followed by a permanent cure; but sometimes, after a few months' absence, the pain will return and the muscle will again have to be stretched. These relapses do not occur unless the patient's general health has not been greatly benefited or it has deteriorated. I have occasionally resorted to an analogous operation, whenever any rectal pain was complained of, or when the spasm of the sphincter ani was so strong as to make a movement of the bowels difficult. In these cases I have usually found the sphincter muscle so well developed by its unnatural exercise, that all my strength was needed to overcome its resistance.

With regard to pellicular colitis, or pseudo-membranous enteritis, I know nothing that will cure it, unless the general neurosis or nerve prostration is overcome. There are, however, local remedies which soothe the rectum, mitigate the suffering and lessen the amount of the secretion of false membrane. Suppositories of iodoform, of belladonna and antipyrin generally act well. Injections of broth, of hot water, of thin starch, of flaxseed tea, and of weak solutions of potassium chlorate or of witch hazel, will do good. I have obtained benefit by a clyster of 2 or 3 ozs. of undiluted limewater, or of the same quantity of Carrom oil. The painful tenesmus often accompanying this disease can generally be overcome by stretching the sphincter muscle. Of course opium soothes above all other drugs, and the temptation to use it is great. But it should be scrupulously avoided, as all such cases are liable to become opium eaters.

The best medicines for a nervous rectum are not those which regard especially the local trouble, but those which, being constitutional in their action, reach the general nerve prostration. My favorite pill is one made by Bullock & Crenshaw, and labelled by them *Pil. Sumbul Comp.* I prescribe many thousands every year. It consists of one-fortieth of a grain of arsenious acid, one grain each of dried iron sulphate and extract of sumbul, and two grains of asafœtida. Since it contains asafœtida, it should be sugar-coated. For the first few days the patient tastes this drug, but usually she very soon ceases to regard it. The chalybeate pill, or Blaud's pill, so highly extolled by Niemeyer, is an excellent method of conveying large quantities of iron into the system. During the first three days, one pill is to be taken after each meal. On the fourth day four pills are taken, viz.: two after breakfast, one after dinner, and one after supper. On the fifth day, five pills; on the sixth day, six—that is to say, two pills

after each meal. For three days more, six pills are taken daily; then the dose is to be increased by one pill daily, until three pills are taken after each meal. On this final dose the patient is kept for three or four weeks, or even longer, and then the number of pills is lessened by one every day until one pill is reached, when it is discontinued. In stubborn cases I have occasionally run up the dose to five pills thrice daily, and have seen no other bad effects from it than a tendency to constipation and a feeling of fulness in the head.

Two other pills have done me such good service that I will mention them: The one is called "the pill of three valerianates," and it contains one grain each of the valerianates of zinc, iron and quinia. The other pill consists of one-eighth of a grain of the chloride of gold and sodium, two grains of zinc valerianate and one grain of extract of hyoscyamus. These pills should be given whenever the nervous symptoms predominate largely over all others, and when the general health is otherwise in a fair condition.

Whenever malaria complicates the case I am very fond of giving a mixture containing one part of Fowler's solution of arsenic to nine of the syrup of iodide of iron. As a chemical decomposition is liable to take place, forming an arseniate of iron which precipitates, this mixture should be well shaken before it is taken. Of this ten drops, in a sufficient quantity of water, are given after each meal on the first day; eleven drops after each meal on the second day; twelve drops after each meal on the third day; and so on until, on the twentieth day, thirty drops after each meal are reached. The medicine is now kept up for a week or two at thirty drops after each meal. The dose is then lessened by one drop, in precisely the same way that it was increased, until ten drops are again reached, when the medicine is discontinued. For strict uniformity in the size of the drops, a dropper should be used. The only objection to this mixture is its liability to precipitate, and also to discolor the teeth temporarily, but it does not injure them like the tincture of ferric chloride.

Of course the bromides are very often needed, for, apart from their soothing properties, they seem to divert the blood from the pelvic organs and to lessen congestion. If continued for any length of time, it is well to combine them with a bitter tonic, such as the compound tincture of gentian. This serves to antagonize their depressing effect.

For sudden paroxysms of rectal pain, or for other nervous outbreaks associated with a hysterical rectum, I know of nothing so effectual as antipyrin in five- or ten-grain doses, or the hydrobromate of hyoscin in doses of one-one hundred and twenty-eighth of a grain—viz.: grain $\frac{1}{128}$. They should be given by the mouth every two hours until either the pain is relieved, or the characteristic symptoms of each drug are exhibited.

Whenever these sufferers are so situated that they cannot afford time for the rest-treatment, or the expense of it, I compromise the matter by making them go alone into a darkened room, and take a rest of one or two hours every day. This repose of body and of mind should be absolute, and it must therefore be so timed as to be free from all interruption.

A CASE OF TYPHLYTIS, WITH DOUBLE PERFORATION OF THE CÆCUM, AND PERITONITIS,

IN WHICH LAPAROTOMY AND SUTURE OF THE GUT WERE FOLLOWED BY RECOVERY.

Read in the Section on Surgery at Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY L. S. MCMURTRY, A.M., M.D.,
OF DANVILLE, KY.

FORMERLY PROFESSOR OF ANATOMY IN THE KENTUCKY SCHOOL OF MEDICINE, ETC.

On the evening of Thursday, January 26, 1888, I was summoned by telegraph to Somerset, Ky., to meet Drs. George Perkins and I. S. Warren, of that town, in consultation. Going by a night train, I joined Drs. Perkins, Warren, and Owens, Sr., at the bedside of the patient at 8 o'clock on the morning of the following day, the 27th.

The patient was a well-known young physician, Dr. J. L. Owens, of Somerset, and I reproduce the history of his illness up to the time of my first visit in Dr. Perkins' own words: "For several months prior to the illness of Dr. J. L. Owens he had been subject to occasional attacks of colic. These attacks were not very severe, would occur without warning, were of short duration, and were frequently attended with nausea and vomiting. They were attributed to indigestion. On January 10 I was first called to see him, and found him suffering intensely with pain referred to the right iliac region. He had already taken $\frac{1}{2}$ -gr. of morphia hypodermatically without relief, and his wife was, by his direction, administering chloroform when I entered the room. The severity of the pain, with its locality, excited my suspicions of renal colic, which opinion was confirmed by Drs. Warren and Owens, Sr., who joined me soon after my arrival. This opinion was still further confirmed later by intense reflex pain in the head of the penis.' By the liberal use of morphia, aided with occasional inhalation of chloroform, relief was secured.

"For three or four days following, an occasional dose of morphia sufficed to keep the patient comfortable. As soon as possible the morphia was discontinued, and laxatives were administered for

relief of the constipation which existed. On January 18 there was increased soreness in the iliac region. On January 23 I first detected by the touch a slight induration there. This induration was almond-shaped and in the line of the ureter. Immediately over it could be elicited dulness on percussion, but not flatness. A diagnosis of renal colic having been entertained, this was supposed to be impaction of the ureter. This induration continued with gradual enlargement, until it became an oblong sausage-shaped tumor in the right iliac fossa. Pain required occasional doses of morphia, and there was moderate febrile movement. On the evening of the 26th hæmorrhage from the bowels began, the patient passing about 32 ozs. of blood. Hiccough was added to the other symptoms, which, with increased frequency of the pulse, tympanites and serous vomiting, established the diagnosis of cæcal or pericæcal inflammation. On the morning of the 27th increased frequency of the pulse, cold extremities and perspiration were interpreted as symptoms of perforation and impending collapse. In solving the problem of intra-abdominal disease in this case I think we were greatly aided by the sparing administration of opium, thereby avoiding the obscuration of symptoms."

When I saw the patient on Friday morning, the 27th, the pulse was small, the surface bathed in perspiration, with frequent vomiting of green, serous fluid, characteristic of peritonitis, and bloody stools as described by Dr. Perkins. The tumor already described was distinct in outline, and readily recognized as the caput coli. In our consultation I recommended immediate section of the abdomen, which was readily acceded to by Drs. Perkins, Warren, and Owens, Sr. Our decision was communicated to the patient, who, being a competent physician, cognizant of his danger and appreciative of the advantages offered by prompt surgical interference in abdominal disease, consented without hesitation. Immediate preparations were begun for the operation. We believed we had to deal with a perforation of the appendix and consequent septic peritonitis.

At 2 o'clock Dr. Perkins anæsthetized the patient and, with the assistance of Dr. Warren, I proceeded to operate, observing thorough antiseptic precautions. The incision was $3\frac{1}{2}$ inches in length, made directly over the tumor, beginning on a line about 2 inches to the right of the umbilicus and continued obliquely in the direction of the pubes; It was afterward extended $\frac{1}{2}$ -inch toward the pubes. The superficial layers of the parietal tissues were healthy, but the deeper layers were heavily infiltrated. The parietal peritoneum and that covering the caput coli and adjacent coils of small intestine were thickened, highly injected, and exhibited flakes of recent lymph. The peritonitis was limited, but bore evidences of being recent, severe and spreading. The cæcum was

¹Symptoms simulating those of renal colic have been frequently observed in cases of perityphlitis. See article by J. W. Elliott on "Perforative Appendicitis," in Boston Medical and Surgical Journal, Jan. 19, 1888, p. 92.

brought up through the edges of the incision and surrounded with a towel wrung out of hot carbolized water. The intestines were retained by warm sponges pressed within the wound. The vermiform appendix was found to be normal. Upon the anterior and external surfaces of the cæcum were two gangrenous perforations, one being somewhat larger than a twenty-five cent piece, the other a little larger than a ten-cent piece. These perforations were black and of well-defined circular shape. The larger perforation was complete, and allowed free exudation from within the gut. The smaller one was scarcely complete, but the tissues were rotten, and upon slight pressure allowed my little finger to slip into the cavity of the gut. The lesions were typically those of perforative peritonitis. With the scissors I trimmed off the edges of the perforations, removing the gangrenous tissue and converting them from circular to elliptical shape. The openings were then closed with silk sutures applied after Lembert's method, five sutures for the larger and three for the smaller opening. The tissues of the gut were thickened with inflammatory exudation. The sutures passed beneath the muscular coat but did not penetrate the mucous membrane. The toilette was made with scrupulous care. The diseased parts and the entire iliac fossa were carefully cleansed with warm carbolized solution (1 to 40), and a large-sized rubber drainage-tube placed deep in the iliac fossa. The wound was closed with silk sutures, dusted with iodoform, and dressed with antiseptic gauze.

Immediate improvement followed the operation. Neither vomiting nor intestinal hæmorrhage recurred. The after-treatment was conducted in accordance with the methods commended by recent clinical experience in cases of abdominal section. Within a few hours after the operation the pulse and temperature fell to almost the normal standard, and so remained, with the exception of a few hours on the third day when the pulse and temperature suddenly ran up in consequence of gastric distension. Drs. Perkins and Warren being present, promptly administered a Seidlitz powder, which was followed by a complete evacuation of the bowels with prompt relief of the unfavorable symptoms. With the exception of this interruption of a few hours, the pulse and temperature remained under 100 after the operation. The bowels were moved, as stated, on the third day, and were kept soluble throughout. Opium was used very sparingly, and when absolutely required it was given in small doses hypodermically. The drainage-tube was removed piece by piece, and was entirely withdrawn on the fourteenth day. The drainage was encouraged and facilitated throughout the after-treatment by suction of the tube, made by means of a small glass syringe, to which the tube could be closely fitted. The dietary, of course, was limited to fluids and semi-solid

foods. The patient rapidly regained his strength, and is now completely restored to health and his professional work.¹ It is only just to my colleagues, Drs. Perkins and Warren, that due recognition should be made of their skill in the diagnosis of the case, their valued aid during the operation, and their services so faithfully rendered during the after-treatment.

The treatment of non-traumatic perforation of the intestine and consequent peritonitis by abdominal section is of very recent date. The first operation of this kind was reported in 1883 by Miculicz, for perforation of the vermiform appendix, with a fatal result.² In June of last year (1887) Weir was able to collect only fifteen cases in which laparotomy had been done for perforation of the intestines not due to traumatic causes. Of this number nine were cases of disease of the appendix, and all save one resulted fatally. In one no perforation was found, the peritoneum was cleansed and the patient recovered. In another an abscess was found, but no perforation, the patient recovering. To Weir's collected list should be added a successful case of abdominal section for perforation of the appendix done by Dr. Thomas G. Morton, of Philadelphia, reported by Dr. Frank Woodbury to the College of Physicians of Philadelphia, June 1, 1887; another successful case reported by Dr. J. W. Elliott in the *Boston Med. and Surg. Jour.*, of Jan. 26, 1888; and also another successful case of perforation of the appendix treated by abdominal section by Dr. Henry B. Sands, of New York, reported in the *N. Y. Medical Jour.* of February 25, making a total of twelve cases with four recoveries. Only one case of perforation of the cæcum treated by laparotomy has been recorded. This case was reported by Regnier in 1886.³ The patient was a male, æt. 16, and the symptoms were those of intestinal obstruction and peritonitis. Laparotomy was done on the fifth day, and the patient died seven hours afterward. The perforation of the cæcum was discovered at the autopsy. From this it will be seen that I have the honor to report the first successful case of abdominal section for non-traumatic perforation of the cæcum. Perforations of the cæcum are extremely rare in comparison with those of the appendix.

Under the head of typhlitis and perityphlitis all inflammatory processes in the iliac fossa involving the cæcum or vermiform appendix are included. In classifying these affections several varieties have been described by surgical writers, but for clinical purposes it is only necessary to describe them as extraperitoneal and intraperitoneal. To differentiate these inflammatory conditions is at times difficult, often impossible. When, however, the local and general symptoms of peritonitis su-

¹ The patient was here presented to the Section.

² Weir N. Y. Medical Record, June 11, 1887, p. 654.

³ *Treatment Chirurgicale de la Peritonite.* Truc. 1886, p. 57.

pervene, with the fearful evidences of perforation, as in the case here reported, the differentiation is made without great difficulty. In the extraperitoneal, perityphlitis proper, the inflammatory process has its origin in the cæcum or its appendix. Adhesions are formed between the opposing peritoneal surfaces, thus shutting off the general peritoneal cavity.* Pus forms in the retroperitoneal connective tissue and, following the connective tissue plane, dissects up the anterior reflection of the peritoneum to appear with tumefaction and fluctuation above Poupart's ligament. A distinction must be observed between this class of cases and those of general septic peritonitis. In evacuating the extraperitoneal abscess the dissection must be carefully conducted with a view to avoiding peritoneal invasion by pushing aside the anterior reflection of the peritoneum. These cases of perityphlitic abscess are comparatively common. They have their origin in inflammation of the appendix or cæcum (as a rule the former), and are shut off by adhesions from the general peritoneal sac. The intraperitoneal cases, of which the case I have reported is an example, are not really cases of perityphlitis as that term should be employed, but are cases of perforative peritonitis. The essential feature of the pathological state here is fecal extravasation (gaseous, fluid or solid), and septic peritonitis. In these cases the tumor is less prominent as a symptom than in the other variety of pericæcal inflammation, but the illness is more sudden and severe, the symptoms of peritonitis become conspicuous, and the signs of collapse may quickly supervene.

In cases of perityphlitis where a tumor presents and inflammatory action is moderate, expectant methods are admissible with a hope of resolution without suppuration. When pus forms in the retroperitoneal connective tissue and is making its way toward the surface, delay may facilitate its access by allowing the peritoneum to be pushed aside. But this advantage does not counterbalance the benefits of an exploratory incision, which should be resorted to as soon as grave symptoms suggest it. The aspirator is unreliable and unsatisfactory as an exploratory means in these cases, and its use is attended with the danger of peritoneal infection. The exploratory incision is more free from danger and much more satisfactory.

With the other class of cases such discretion cannot be indulged. As soon as the diagnosis of intraperitoneal inflammation is made, abdominal section should at once be performed. Delay here is fatal. To stand in waiting, giving opium freely, is neither conservative nor surgical. The operation should be done before the septic process has spread throughout the peritoneum.

* Treves has shown by the examination of 100 bodies that the cæcum and appendix are wholly intraperitoneal, and free within the abdominal cavity; that the cæcum and its appendix are completely enveloped by peritoneum. (The Anatomy of the Intestinal Canal and Peritoneum in Man. 1885, p. 55.)

In the case here reported I believe success is due to the early detection of the lesions by the gentlemen in attendance, the prompt acceptance by the patient of the operation when proposed, and its satisfactory accomplishment. The case, I believe, is unique, and marks a further extension of the triumphs of abdominal surgery.

VITAL CAPACITY OF THE LUNGS AND THE VACUUM PNEUMATIC SPIROMETER.

BY JOSEPH JONES, M.D.,
OF NEW ORLEANS.

PRESIDENT OF THE LOUISIANA STATE MEDICAL SOCIETY.

The instruments for measuring the vital capacity of the chest have been designed to measure the total amount of air propelled from the chest by the deepest expiration following upon the deepest inspiration.

Our most important knowledge of spirometry was derived from Dr. Hutchinson's exhaustive paper in the *Medico-Chirurgical Transactions* of 1846. The instrument designed by Hutchinson consisted of a mouth-piece and tube communicating with a gasometer of registered and graduated capacity, into which the patient breathed.

Mr. Towne has of late years invented a convenient and accurate spirometer, which works on the principle of the anemometer. The advantage of this instrument is its portability. As is well known the *anemometer* is a contrivance used by the meteorologist for indicating the rate or velocity and direction of the wind.

Dr. Waldenburg has described a spirometer identical in principle with Hutchinson's, but elaborate and capable of being employed for the purpose of inhalation of compressed or rarified air.

The chief results of Dr. Hutchinson's labors may be thus summarized: The vital capacity of the lungs varies according to height, weight, age and disease.

1. *Height*.—There is an increase of 8 cubic inches in vital capacity for every inch in height between 5 feet and 6 feet. Thus the vital capacity of a healthy person at 5 feet to 5 feet 1 inch being 174 cubic inches. At 5 feet 4 inches it would be $174 \text{ cubic feet} + 32 = 206 \text{ cubic inches}$ At 5 feet 8 inches 238 cubic inches, etc.

2. *Weight*.—Excess in body weight is associated with diminished capacity in the proportion of about 1 cubic inch per pound, excess.

3. *Age*.—From 30 to 60 years the vital capacity decreases nearly 1 and $1\frac{1}{2}$ cub. in. per year.

4. *Disease*.—The spirometer furnishes a very accurate standard of health, or of the extent of disease as regards the chest, the vital capacity in lung disease diminishing from 10 to 70 per cent.

Whenever the quantity of air is 16 per cent.

deficient there is reason to suspect some local affection of the chest. Dr. Graham Balfour has followed up these investigations of Dr. Hutchinson on the chest. Dr. Balfour has especially examined how far a capacity under the average may be taken as an indication either of a tendency to pulmonary disease or of a feeble constitution, rendering such men liable to a higher rate of mortality than that to which men of or above the average are subject. He found that the loss to the British army by consumption was much greater among the men having a *vital capacity* "under the average" than amongst men of average capacity, or above it; and although the proportion of deaths did not differ materially amongst those three classes, yet the invaliding was *four times* as high among men *under the average*, as among the others.

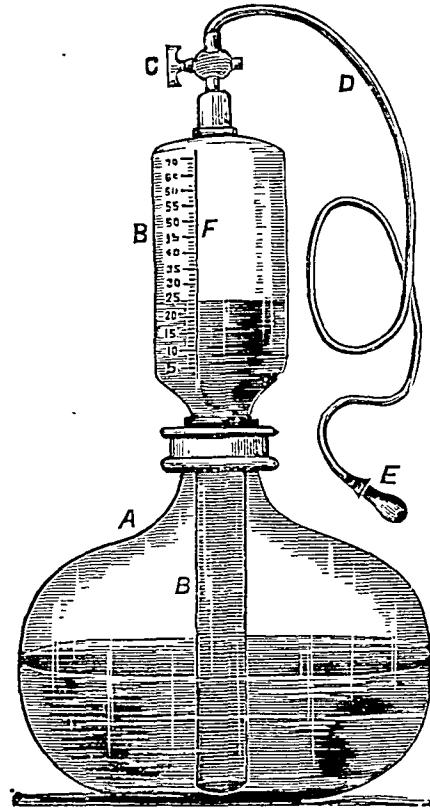
A "*vital capacity*" below the average may therefore be considered as indicating a generally feeble organization, less capable of resisting the deteriorating influences to which a soldier is exposed. (Contributions to the study of "Spirometry." Med. Chir. Transactions, Vol. XLVIII.)

Such functional incapacity is further indicated by the "*breathing being shorter* with less breath motion." The *expiration* is quick and forcible; and there is a minimum quantity of air taken in by ordinary *inspiration*. Such lessened respiration tends of itself to induce accumulation of mucus in the air cells, and thereby to set up inflammation. Everything which tends to impede or to interrupt or obstruct the regular, complete and continual performance of the respiratory act, has a most prejudicial effect upon the lungs (especially of "growing lads"), favoring the growing of the material in the air cells, which may eventually degenerate and form a cheesy mass in all respects resembling tubercle. Life not only depends on *breathing*, but the energy and the vigor of life are in a great measure ruled by the capacity and the free play of the breathing organs.—(Sibson.)

During the past eighteen years I have employed the following apparatus as an important aid in the diagnosis of phthisis, pulmonalis and other acute and chronic diseases of the pleura and lungs. The instrument has also proved useful in my hands, for the determination of the vital capacity of the lungs, as influenced by *age*, *weight*, *stature*, *development* and *growth of the skeleton*, *the growth of the muscles in relation to the bones*; *the progressive increase or decrease of muscular force with advancing years*; and *the effects of preceding attacks of pleuritis, pneumo-thorax; hydro-pneumo-thorax; bronchitis; asthma; emphysema and traumatic injuries of the lungs*.

The Vacuum Pneumatic Spirometer consists of a large glass globe or receiver. A. This receiver should be furnished with water to the amount of at least half its capacity. It is best to dissolve

about 1 ounce of the permanganate of potash in the water, so as to remove by oxidation all deleterious organic matter which at any time might be absorbed. Diameter of large glass receiver 15 inches; circumference of largest part of large glass receiver 48 inches.



VACUUM—PNEUMATIC SPIROMETER.

- A. Large glass receiver containing pure or medicated water.
- BB. Glass tube and small graduated glass receiver.
- C. Glass stop-cock, communicating with graduated glass receiver.
- D. Flexible tube, communicating with graduated receiver B.
- E. Mouth-piece communicating with flexible tube.
- F. Graduated line indicating the capacity of the receiver in cubic inches.

B.B. Glass tube and small graduated glass receiver.

Diameter of large glass tube connected with small graduated receiver $1\frac{3}{4}$ inches. The tube and small graduated glass receiver may be compared to a large displacement funnel; closed on the top by a brass cap and tube, with stop-cock both capable of opening and closing. Diameter of graduated receiver 6 inches, circumference of graduated receiver 20 inches. Length of graduated receiver $12\frac{1}{2}$ inches. Length of glass tube attached to graduated receiver $11\frac{3}{4}$ inches. Height of entire apparatus from the base of the large receiver to end of stop-cock 30 inches. The summit of the large glass globe is covered by the brass cap, 4 inches in diameter, with an internal opening of about 2 inches, through which the large glass or prolongation of the graduated receiver passes. The brass cap is also perforated by eight openings, circular, and about $\frac{1}{16}$ of an inch, each in diameter. These openings allow

free communication between the external air, and that contained in the large receiver above the liquid which it contains. The tube of the graduated receiver passes through the brass cap or support on the top of the large receiver, and reaches to within about 2 inches of the bottom of the liquid. From this arrangement, if air be blown through the flexible tube E., it will pass out of the receiver and tube, and bubble through the water and escape by the brass cap. The base or lower portion of the graduated receiver is supported by the brass cap, covering the neck of the large receiver. F. Graduated line, indicating the capacity of the receiver in cubic inches. The O mark is at the lower extremity of the large glass tube or funnel like prolongation of the graduated receiver, and the graduation proceeds regularly upwards to 240 cubic inches. The graduated portion of the receiver holds 240 cubic inches, or about 3952.2 cubic centimetres, or about 128 fluid ounces = one gallon.

MODE OF USING THE VACUUM PNEUMATIC SPIROMETER.

The patient is directed to expel all the air out of the lungs, bending the body gently and steadily forward, as he expires, so as to aid the expulsion of all the air, if possible from the lungs. The mouth-piece of the flexible tube is then placed between the lips and firmly held, whilst the patient inflates his lungs from the air confined in the graduated receiver. A partial vacuum is thus formed, and the pressure of the atmosphere about 15 pounds to the square inch forces the water in the large receiver into the tube and receiver. The amount of air thus inspired corresponds to the column of liquid which rises in the graduated receiver and is indicated in cubic inches.

GENERAL RESULTS OF INVESTIGATIONS ON THE VITAL CAPACITY OF THE LUNGS IN HEALTHY AND DISEASED INDIVIDUALS, AS SHOWN BY THE INDICATIONS OF THE VACUUM—PNEUMATIC SPIROMETER.

1. The accuracy of the conclusions of Dr. Hutchinson as to the relation of height, weight, age and disease to the vital capacity of the lungs have been confirmed by over 1000 experiments. The general results of the investigations of Dr. Balfour have also been confirmed.

2. In cases of incipient tuberculosis, or in the early stages of this disease the cubic vital capacity of the lungs irrespective of the height or weight, or age of the adult patient (male) do not exceed on an average 130 cubic inches.

3. In the advanced stages of phthisis pulmonalis, the vital capacity of the lungs in adult males ranges from 60 to 120 cubic inches.

4. No correct estimate can be made of the cubic capacity of the female lung, unless the corsets

and all bandages be removed from the thorax and abdomen.

Similar decrease in vital capacity of the lungs is noticed in the female suffering with phthisis pulmonalis.

5. The vital capacity of the lungs is diminished in chronic bronchitis and in pleuritis. In the latter disease, the diminution of the vital capacity in the lungs will correspond with the amount of liquid effused into one or both pleural cavities.

6. The vital capacity of the lungs is diminished in emphysema, in asthma during the paroxysm when the disease is spasmodic, in permanent asthmatic conditions of the lungs, and to a limited extent in chronic bronchitis.

7. Certain cases of general paralysis and locomotor ataxia, when attended with diminution of the vital capacity of the lungs, without structural alteration, or the deposit of tubercles in these organs, such diminution being due to the loss of muscular power in the thoracic walls.

8. If the liquid contained in the large glass receiver be medicated with carbolic acid, iodine, petroleum or other volatile substances, beneficial effects may result from the use of the vacuum pneumatic spirometer.

9. The daily inflation of the lungs, by the use of the vacuum pneumatic spirometer has proved beneficial in some cases by enlarging the capacity of the air-cells. We have the means of observing accurately the changes in the capacity of each individual under treatment.

10. The use of the vacuum pneumatic spirometer, gives precision to diagnosis, and accuracy to prognosis.

156 Washington St., 4th District, New Orleans, La.,
April 23, 1888.

THE EXTERNAL APPLICATION OF SULPHUR IN SCIATIC NEURALGIA.

Read before the Illinois State Medical Society, at its Thirty-eighth Annual Meeting, in Rock Island, Ill., May 15, 1888.

BY J. D. COWDEN, M.D.,
OF ROCK ISLAND, ILL.

Sulphurous baths, natural and artificial, have been in vogue for a long time in the treatment of rheumatism and neuralgia. The external application of the flowers of sulphur, however, in the treatment of sciatica, although its therapy, on second thought, from our previous knowledge of the action of sulphur, would seem rational enough, has but recently been tried.

In the *Therapeutic Gazette*, for April, 1888, will be found an article on "The External Application of Sulphur in Sciatic Neuralgia." In confirmation of what is therein stated, I beg leave to report to this Society the following case which recently came under my observation:

J. R., æt. 45, weighing 180 lbs., an Irishman of sanguine temperament and strong constitution,

in robust health up to the time of this attack; saloon-keeper by occupation, "very happy" in his calling and "cheerfully waited upon his customers." For two months before I was called to see him he had been an almost constant sufferer from sciatic neuralgia. He finally became unable to walk about, took to his bed, and to use his own language at the time I first saw him: "I am suffering the tortures of the damned and am not able to sit, stand, nor lie." He had a haggard, worn look, and his condition indeed pitiable in the extreme. For some four weeks the usual remedies for neuralgia were tried with indifferent results, until finally, in addition to the usual treatment it took morph. sulph. gr. ss.; atropia sulph. gr. $\frac{1}{10}$, hypodermically, twice or three times in the twenty-four hours to give him even temporary relief from his horrible suffering. At the end of this time I called one morning and found him in agony, writhing in torture and completely discouraged. He begged most piteously for the hypodermic injection and said he would die. I told him I would give him no more hypodermics and no more medicine, but would bury him in sulphur instead. He then said: "My God! doctor, I will die before night if I don't get relief." I told him that if the sulphur did not relieve him he would have to die, as that would be the only treatment for the next twenty-four hours.

The limb was accordingly enveloped in the dry sulphur. In less than two hours he was sweating profusely, sleeping soundly, and oblivious to all pain and suffering. He woke up in the evening long enough to take some nourishment, then again fell asleep and slept continuously during the following night, the perspiration continuing, and awoke in the morning free from pain, able to turn over in bed and move and extend the limb in all directions without complaint. The look of suffering that had been so marked before the application of the sulphur was gone. He then got up and, to his great surprise, walked easily about the room without suffering or pain. He was then put into a large wash-tub, thoroughly scrubbed and washed with soap and water, after which, at his own request, he was again put to bed and the sulphur reapplied to the limb and sacral region of the spine. The next morning he was given another bath, the neuralgia had disappeared, and from that time on, without further medication, his recovery was continuous and, so far as the pain is concerned, up to this writing is complete.

For a few days after discontinuing the sulphur he suffered from sleeplessness and nervous prostration, but the further progress of the case towards recovery was left to the *vis medicatrix naturæ*.

The perspiration, the breath, and urine, after the application of the sulphur, were very soon impregnated with sulphuretted hydrogen, making it very disagreeable for the patient and his attendants on that account. The rapid absorption of

the sulphur, as shown by the profuse perspiration, perfumed breath, etc., and the speedy relief which followed its application, would seem to point to a specific action of the remedy.

On April 30, some two weeks after the above report was written, the patient had a relapse, caused by sleeping in a draft between two open windows, and the sulphur had to be reapplied. The same happy effect, entire relief from pain, followed as quickly and promptly as it did on the first application of the remedy.

On May 10, in consequence of his anæmic condition, caused by his long sickness, I put him on 20-drop doses of the tincture of iron four times a day, since which time he has rapidly gained in health and is now entirely free from his neuralgia.

"There is a pleasure in the pathless woods" of speculative medical philosophy, "a rapture on the lonely shores" of the imagination of the disconcerted doctor, known only to certain medical minds so formed as to be ever open to the reception of theoretical ideas and impressions for the relief of suffering humanity. It may yet prove to be a most happy conception, freighted with relief for suffering mortals, which suggested to the imagination of the enthusiastic, speculative medical philosopher the idea of applying sulphur externally in sciatic neuralgia, so quickly and speedily does entire relief from horrible suffering follow its application.

MEDICAL PROGRESS.

SULPHONAL AS A HYPNOTIC.—DRS. J. C. WILSON and R. HUTCHINSON report five cases in which sulphonal was used. *Case 1* was a control test to the subsequent investigations, gr. xxv of the drug were given to a healthy male adult upon retiring, with no more effect than his normal, peaceful repose, and with no ill-effects whatever. In the second case, one of terminal dementia, with a history of alcoholism and opium taking, with marked delusions of a depressing character, and acute exacerbations at irregular periods, when he becomes restless, sleepless and noisy. Gr. xxv and lv of sulphonal within four hours had no perceptible effect. The only case in which it had any effect was that of a male, 46 years old, in the preataxic stage of tabes dorsalis; business worries; habitual bad sleep; frequent excesses in drink, followed as a rule, by great mental and physical depression and prolonged inability to sleep, often extended, despite large doses of chloral, the bromides, hyoscine, etc., for several nights in succession. Morphine hypodermically not well borne. May 25, after two nights of distressing wakefulness, took 15 grains of sulphonal at 6 P.M.; 30 grains at 7 P.M.; 15 grains at midnight, after which he slept quietly for two hours.

May 26, took at 11 P.M., 30 grains, and slept continuously eight hours without interruption. May 27, took at 10.30 P.M., 30 grains without effect. This patient suffered from the gastro-hepatic catarrh, which usually follows a prolonged debauch, and took even liquid food with difficulty; much thirst and nausea; occasional vomiting. No aggravation of these symptoms, and no effect whatever upon the pulse, respiration or temperature, followed the administration of the sulphonal. The preparation used in these observations was Merck's.

These observers regard sulphonal as superior as a hypnotic to chloral, paraldehyde, the bromides, amylene hydrate, opium, and cannabis indica. It is a pure hypnotic, and without disagreeable after-effects.

The dose for an adult is $\frac{1}{4}$ grams (gr. xv-lx). It may be given in water or mixed with fluid articles of diet. In these doses sulphonal has no influence on the digestive organs, nor on the respiration, circulation or temperature.—*Medical and Surgical Reporter*, June 9, 1888.

ESERINE IN CORNEAL ULCERS.—DR. HERBERT HARLAN, of Baltimore, says in an article on this subject:

Having been much impressed with the value of eserine in corneal ulcerations, and finding that very few druggists, even in so large a city as Baltimore, keep a supply of the drug on hand, it occurred to me that physicians were neglecting a valuable remedy, and that it would perhaps not be amiss were I to call attention to its value as a therapeutic agent in this class of cases. The best-known physiological effect is the marked contraction of the pupil following the installation even of very dilute solutions into the eye. It was in 1875 that the anti-glaucomatous effect of eserine was first discovered by Professor Laqueur, of Strasburg, and its very greatest value is in this terrible disease.

That eserine has the power of lessening intra-ocular tension has been demonstrated by many observers. In ulceration of the cornea the worst symptom is the photophobia, and the greatest danger is rupture of the eyeball from intra-ocular pressure. We thus have an agent which, while it contracts the pupil, and shuts out much of the annoying light, at the same time lessens pressure and the danger of rupture, keeping the eye in the best condition for the reparative process, and the patient in the most comfortable situation possible during this time. Thus, theoretically, eserine should be a valuable agent in corneal ulceration, and I think the cases reported below bear me out in the statement that it really is.

There is one variety of corneal ulcer to which I have found it particularly adapted, namely, that following a blow from a piece of an oyster-shell, described first, I believe, by Dr. W. J. McDowell

in 1879, under the name of "oyster-shucker's corneitis." My experience, however, extending over the last seven years, differs from that of Dr. McDowell in several particulars. First, he lays especial stress on the central location of the lesion, which he refers to as a "pearly opacity of interstitial exudation, appearing always near the centre of the cornea." The etiology he considers "a specific toxic element contained in the slime and dirt which coats the oyster-shell," which, getting into the eye, starts the trouble; for, says he, "no trace of traumatism can, by the closest scrutiny, be detected." My notes of cases show that the spots occur anywhere on the surface of the cornea, often there is evidence of traumatism, and I have many times removed small pieces of shell. Still, in most cases, there is no break in the smooth corneal surface. For the first few days there is merely the perfectly circular white spot, accompanied by photophobia and congestion of the scleral zone of blood-vessels. A few such cases go on to get well with simple treatment and without complications. The majority do not, and after several days the opacity is very white and looks much like a foreign body. If any attempt be made to remove it as such, it will be found to be a slough of the outer layer of corneal tissue, free at the edges, and only attached at the very bottom. A day or two later this slough comes away, leaving an ulcer with sharply cut edges of about the size of the head of a large pin. Until I began to use eserine I found these ulcers often very intractable, entailing on the patient, in most instances, several weeks of suffering.

Of the eighteen cases ten were surely and positively benefited, being under observation several days. Seven were seen but once, and from this fact it is a fair presumption that most of them required no further treatment. One case only did not seem to be benefited. This patient was under observation for seventeen days, and during this time various remedies were used without avail. On his last visit he was directed to return to the use of the eserine. His case was not from injury by oyster-shell.

Finally, in the use of eserine two cautions are to be observed: First, not to make the solutions too strong. With many patients a solution stronger than gr. j. to $\bar{3}$ j. gives a great deal of pain; and, second, to be very sure that the case you are treating is not complicated by iritis.—*The Medical Record*, June 23, 1888.

TREATMENT OF CARDIAC AFFECTIONS.—That adonis vernalis in doses of from 3 to 7 grams in twenty-four hours, and convallaria majalis, do not merit the appellation of substitutes for digitalis is Nothnagel's clear conclusion. But they may be tried if digitalis has failed. Sparteine prescribed in milligramme doses regulates the pulse and modifies the contractions of the heart,

but it does not possess the diuretic action or the influence over blood pressure possessed by digitalis. Caffeine ought to be prescribed in minimal doses of 1 gram every day, in 5 parts. Nothnagel has used 3 grams, and prefers either the salicylate of soda and caffeine, or the benzoate of soda and caffeine. Its only inconvenience is the excitation of the nervous system; but it is an excellent diuretic, and especially indicated where there is dropsy. Nothnagel alternates five or six days of digitalis with ten or twelve of caffeine. It would be preferable to combine calomel with opium when it is wished to cause diuresis, according to the method of Jendrassik (.5 to .6 gram of calomel during three or four days). But it is necessary to cause evacuations, lest the calomel be transformed into sublimate and attack the intestinal mucous membrane; of course the mucous membrane of the mouth must be watched. As to the method of Oertel and the treatment of cardiac degeneration by ascension of heights combined with subtraction of liquids, Nothnagel, although very sceptical, appears inclined towards the view that the ascensions may exercise a stimulant effect on the degenerated heart muscle and cause a useful hypertrophy, but that prudence is highly necessary in recommending this variety of treatment.—*Lancet*, June 2, 1888.

BOILING WATER IN SURGERY.—In a lecture on "Certain Antiseptic Principles, and on the Value of Boiling Water in Surgery," M. TERRILLON says that the supposed sterilization of instruments by plunging them into an antiseptic liquid, such as a 20 per cent. solution of carbolic acid, is only illusory disinfection, since it is necessary that the antiseptic solution penetrate to all the crevices and anfractuositities of the instrument, which is often a difficult thing to realize on account of dried blood-clots, etc., in such places as the teeth of hæmostatic forceps. For these reasons Terrillon began two years ago to sterilize his instruments by placing them in boiling water for ten minutes. He has every reason to be satisfied with the results.

Every instrument intended for use in an operation should be boiled for ten minutes in water that has passed through a Chamberland filter. At the time of the operation these instruments are placed in a glass or porcelain plate, and a solution of carbolic acid is poured over them. At the conclusion of the operation the instruments are thoroughly cleansed, being placed in tepid water for a few minutes, and then scrubbed with an appropriate brush, which has been washed, soaped, and passed through potash and carbolic solutions. They are then plunged into boiling water, where they are left for ten minutes. After this the instruments are placed in a special vessel, in which they are excluded from the outer air until the next operation, when they are again boiled. This double boiling at intervals of several days is especially

useful, since it insures the destruction of spores.

All parts of surgical instruments should be metal. Terrillon's instruments have no wooden parts of any kind.

Sponges are difficult to render aseptic. They should not be placed in boiling water, since this injures them. They are first washed in water to free them from foreign substances, then placed in a solution of permanganate of potash for several days, washed again, and then placed in a 5 per cent. solution of carbolic acid or a solution of corrosive sublimate for seven or eight days. To keep them they should be dried and shut up in a dry jar, or placed in a weak antiseptic solution.

Terrillon sometimes uses sponge tissue, which he prepares in pieces as large as the hand. These, stitched together, make excellent compresses. To sterilize them he uses soap and water, and then boils them for a quarter or half an hour in strong carbolic solution, and keeps them in an antiseptic liquid.

To prepare silk for ligature material, it should be boiled for a few minutes, and then kept in sublimate solution, or in a very weak solution of carbolic acid. When needed for an operation, it is taken from the receptacle with a pair of forceps, and plunged into boiling water.—*Bulletin Médical*, No. 46, 1888.

THE USES OF BELA.—The *Cratava marmelos*, known in India as the Bel or Bela tree, belongs to the family Rutaceæ, series Aurantiæ. The root, bark and leaves are thought in Malabar to be refrigerant. The bark of the root is prescribed in India in the form of decoction in intermittent fever, and the bruised and boiled leaves are used as cataplasms in ophthalmia. The decoction of the bark of the trunk is used in cardiac affections, and the distilled water of the leaves is regarded as alexipharmic. But the part most used is the fruit, especially its mucilaginous pulp, which has an agreeable odor and sweet flavor. By dessication it loses its aroma, but preserves a slight acidity. In commerce the fruit is obtained entire or in dried slices, grayish, with a smooth exterior coat, containing a gummy pulp, hard, and of a brownish or orange color. The microscope shows that the fruit has a thick cuticle and two layers, one containing numerous cells filled with small oily drops, the second formed of silerenchymatous layers. The pulp is formed of large cells. The grains yield up to water a mucilage similar to that of flaxseed.

As regards the chemical composition of the pulp, its chief contents are mucilage and pectin. The first is not colored by iodine, and consists of two substances, one of which is soluble in water. The second is not soluble, but swells up like gum tragacanth, forming a glutinous transparent mixture. Collas, physician in chief of the marine at Pondicherry, has found 5 per cent. of tannin in

this pulp, though Flückinger could find no traces of it. But according to Warden the fruit, ripe or unripe, moistened with a solution of chloride of iron, gives a pronounced tannin reaction in the part of the pulp near the epicarp. The mucilage in the grains is acid, and contains lime.

The pulpy part of the fruit, when ripe, is said to be of agreeable flavor, and is relished even by Europeans when made into sorbet and mixed with tamarind pulp. It acts as a slight laxative, and is useful in cases of habitual constipation accompanied by flatulence, and has been recommended for the purpose of regulating the bowels during an epidemic of cholera, to prevent either constipation or diarrhœa. In India the unripe fruit is regarded as an astringent, and is recommended as a valuable remedy in chronic diarrhœa, dysentery. The bela mixture, 2 parts of the pulp, 4 of water, and 2 of sugar, in the form of sorbet, is said not only to act well in diarrhœa, but also has the singular property of being aperient as well. If this is rejected by the stomach the extract may be substituted for it. The extract is obtained by treating the pulp with water, and then evaporating to a soft consistency. The dose is from 2 to 4 grams two or three times a day. It is more active when made from the fresh pulp.—*Nouveaux Remèdes*, No. 8, 1888.

SUTURE OF WOUNDED LIVER.—The *Riforma Medica* of June 9th contains a full account of PROFESSOR POSTEMPSKI's operation for wounded liver. Antonio A., aged 28, was stabbed under the arch of the ribs, on the right side, on April 18th. The cutaneous wound, which was parallel to the costal margins, was five centimètres in length, whilst that of the liver (left lobe) was seven centimètres long, and three in depth at the deepest part. The patient, when seen, was in a state of profound collapse from loss of blood. There was no difficulty about the diagnosis, as exploration with the finger served to disclose the nature of the case. Professor Postempski, who had satisfied himself so far back as 1885, by experiments on dogs, that the liver-substance could be stitched without giving way, determined to try that mode of treatment. He accordingly enlarged the wound in the skin by five centimètres, and made a second vertical incision in the middle line across the first. The wounded lobe was pushed forward as far as possible, and, while the pieces of sublimated gauze, with which the wound had in the first instance been plugged, were being withdrawn, six points of chromiced catgut suture were passed through the whole depth of the wound with extremely fine curved needles. The sutures were very carefully tightened as they were introduced, the edges of the wound being at the same time gently pressed together, so that the loop of catgut did not draw them into contact, but merely kept them in apposition. The sutures

were tied in a knot, and there was not the slightest laceration of the liver-substance through which they were passed. Hæmorrhage ceased at once, but the critical condition of the patient made it impossible to wash out the peritoneal cavity at all thoroughly, and Dr. Postempski believes that the greater part of the extravasated blood remained in the abdomen. There was no rise of temperature, however; but, on the second day after the operation, there was very abundant albuminuria, which lasted for twenty-four hours, when it completely ceased. The patient got up on the eighteenth day, and he is now perfectly well, without any local pain, or any appreciable enlargement of the liver.—*British Medical Journal*, June 16, 1888.

CARBOLATE OF MERCURY.—The compound originally recommended by GAMBERINI was a basic salt, having the composition $C_6H_5OHg.OH$, and prepared by dissolving 122 parts of carbolate of potash in 1000 parts of water, and pouring the filtered solution into a solution of 271 parts of mercuric chloride in 8000 parts of water. An orange-colored precipitate is formed and collected on a filter, thoroughly washed, and dried in the dark at a temperature of $80^\circ C$. The neutral salt is, however, preferred; its formula is $(C_6H_5O)_2Hg$. To make it dissolve, 188 parts of absolute phenol and 56 parts of solid caustic potash on a water-bath in the smallest possible quantity of alcohol. Add to this an alcoholic solution of 135 parts of corrosive sublimate. Evaporate the mixture nearly to dryness with constant stirring; add some boiling water, and collect the product on a filter; wash first with pure water, then with water containing acetic acid; drain the product on a porous tile, and recrystallize from alcohol. The salt forms colorless needles, nearly insoluble in water and only slightly so in cold alcohol. It dissolves in 20 parts of boiling alcohol, also in ether and in glacial acetic acid. It is not decomposed by caustic alkalies, by sulphuretted hydrogen, or even by ammonium sulphide. Dose $\frac{1}{2}$ to $\frac{1}{3}$ grain three times a day.—*Pharmaceutical Record*, June 1, 1888.

ANTIPIRYN IN CEREBRO-SPINAL MENINGITIS. MR. GUY N. STEPHEN, of the Cyprus Medical Service, says: Antipyrin is of the greatest possible value in epidemic cerebro-spinal meningitis. Its success in the disease depends less on its property of reducing temperature than on its power of quelling those "nerve storms" which are one of the principal causes of death in this disease.

Its value is all the greater in that it is not, as in the case of other diseases, only a mere addition to the armament of the physician, but that it is practically the only medicine which is a real "remedy" against the disease.

Opium, ergot and belladonna, bromides, and aconite all do good service in allaying the terrible pains, and perhaps in favorably influencing the course of the disease, but they have no power of warding off impending death, while antipyrin I have found to fulfil all three indications. The necessary doses vary somewhat, but 45 grains in three doses distributed over the evening and night is the most usually successful quantity. I have not yet had an opportunity of trying it in idiopathic, traumatic, or tubercular inflammations of the meninges, but the pathological conditions, apart from the causation and the symptoms, are so allied in character with those of cerebro-spinal fever that I would suggest a trial and expect it to yield results at least as favorable as those of the remedies already in vogue.—*British Medical Journal*, June 9, 1888.

PUERPERAL URÆMIC AMAUROSIS.—A case of uræmic amaurosis in the puerperal period is noted by DR. P. MARCUSE. The patient remarked five weeks before delivery that her urine was dark and scanty and that her feet were swollen. Immediately before her confinement the secretion of urine almost entirely ceased, but there was no headache, vomiting, or loss of consciousness. As soon as the pains began, however, violent headache came on. The labor was normal; after it was over, vomiting was added to the headache, and a quarter of an hour later the patient was completely blind in both eyes. The next day the eyelids were closed. When opened with the fingers the eyes appeared dull and wandering; the pupils were of equal size; there was complete amaurosis; both feet and legs were greatly swollen; but there was no swelling of the face, and very little ascites. During twenty-four hours the urine passed was about nine ounces; it was of a dark reddish-brown color, and contained 1 per cent. of albumen. Ice bladders, morphia and diuretics were ordered. The patient very soon improved. In four days she could see to read, and in a fortnight she was convalescent.—*Lancet*, June 16, 1888.

SEMOLINA IN DIABETES.—MR. W. STANLEY ARMITAGE writes, in the *Lancet* of April 28, 1888:

Some time ago I had the opportunity of watching a case of persistent glycosuria very closely, and found that at a time when the ingestion of a very small amount of toast, bread, or other farinaceous food was sufficient to produce Fehling's test afterwards in the urine a large quantity of semolina pudding could be consumed without any such result. I was induced to try semolina after hearing of the method of its manufacture from an Edinburgh gentleman. As the quality of this food seems to me likely to vary, I ought to state that what was used in this case was obtained of an Edinburgh house, and was stated to be of the best. This I mention because,

if carelessly prepared, no doubt much of the farinaceous element might be retained, though I am not aware that this ever is the case. Not having heard of semolina as a food in diabetes, I should much like to hear of anyone who may have tried it, and would also request other medical men to see if it can be given in other and more pronounced cases of diabetes with a like good result. If such were the case, as it could be cooked in various forms, or baked as bread, it would add considerably to a class of food which is at present only far too limited.

PHYSIOLOGICAL AND THERAPEUTIC PROPERTIES OF OLEANDER.—DR. POULOUX, at the close of a thesis on this subject, draws the following conclusions:

1. Oleander (*nerium oleander*) is a very active poison, the toxic properties of which are due to several substances somewhat similar to strophanthine and digitaline, and probably belonging to the group of glucosides.

2. Oleander has a manifest action on the frog's heart, arresting it in systole, as well as on the heart of the rabbit.

3. In cases of asystolism due to renal, non-compensated or cardiac lesion, oleander gives tone to the heart, and increases diuresis. It seems to be indicated in the same cases as digitalis.

4. Further researches are necessary to determine the cases in which oleander is really useful and in which it is contraindicated.

5. It does not cause cumulative symptoms, and may be given for an indefinite time without causing accidents.—*Nouveaux Remèdes*, No. 8, 1888.

ACTION OF STROPHANTHINE.—GLEY claims that his effects from strophanthine are entirely different from those obtained by Lemoigne with extract of strophanthus. He has found that not only in diuresis not produced by the active principle, but that the quantity of urine is diminished, and that the kidney decreases in size, as shown by mensuration. There is an enormous increase in central and peripheral pressure. These facts seem to show that there is some other substance in the extract than the active principle.

THE TREATMENT OF PERFORATIONS OF THE TYMPANUM.—DR. POLO states that he has met with great success in the use of the fresh pellicle of the egg in closing perforations of the tympanum. The grafting of such a thin organized substance excites no irritation, and may be retained for a long time; as long as ten months. The application of the membrane is difficult, and requires skill. The use of gold beater's skin has been practiced for this purpose a long time in Paris, but it remains as a foreign body, and does not permanently adhere, whence it becomes a source of irritation at the bottom of the meatus.—*Journal de Méd. de Paris*, April 22, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5 00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 7, 1888.

MEDICAL COLLEGES AND MEDICAL ETHICS.

A correspondent connected with a regular medical college writes us substantially as follows: A man matriculates in the medical college as a student, attends one annual course of instruction and proposes to continue the required length of time, and become a candidate for the degree of M.D., in apparent regular course. At the same time he holds a *diploma* from another medical college that he tacitly acknowledges he simply *purchased*; that he is now, and has been for some time, publicly engaged in the treatment of disease with a secret remedy; and that he will not agree to discontinue such practice should he receive the regular diploma of the college in which he is a matriculate. With this statement of facts, our correspondent requests from us answers to the following questions: 1st. Can the college confer upon him its degree of Doctor of Medicine without violating some provision of the National Code of Medical Ethics? 2d. If the said matriculate continues his attendance and conforms to all the published requirements of the college, including certificates of moral character, has the college the right legally to refuse to confer on him the diploma, on account of his known practice with secret remedies?

The following paragraph from the Code of Medical Ethics, is perhaps the most direct answer to the first question, viz.:

"It is not in accord with the interests of the public or the honor of the profession that any physician or medical teacher should examine or

sign diplomas or certificates of proficiency for, or otherwise be specially concerned with the *graduation* of persons whom they have good reason to believe intend to support and practice any *exclusive* and irregular system of medicine." Treating disease with *secret* remedies is certainly the climax of *exclusiveness*. And another paragraph in the same division of the Code says: "Equally derogatory to professional character is it for a physician to dispense a *secret nostrum*, whether it be the composition or exclusive property of himself or others."

Concerning the second question we have no hesitation in answering in the affirmative. The faculty and trustees of a medical college have an undoubted right to refuse granting the diploma to any person whose known professional practices are such as would debar him from every reputable medical society in this country and exclude him from professional recognition by members of the profession generally. Not only have they such right, but they are under the strongest obligation to faithfully exercise that right, by refusing such an one a place in any list of *candidates* for graduation.

EYE TROUBLES IN TABES.

Some years ago M. EMILE BERGER made a report of a series of researches, in which he had been engaged, in Austria, in regard to the eye trouble caused by tabes dorsalis. These researches were finished in Paris, and on June 4 M. Berger made a second report on the subject, to the Académie des Sciences. This report includes 109 cases, of which 47 were syphilitic, 26 were in the pre-ataxic stage, 50 in the ataxic, and 33 in the paralytic stage.

Among the symptoms not hitherto described is diminution of intraocular tension, which was very striking, and was of all degrees up to feeble resistance of the globe. In 2 cases only was there hypertonia, but this was developed before the commencement of the tabes. Of the cases presenting considerable hypotonia, this phenomenon was present on one side only in 2 cases in the pre-ataxic stage, and in 11 cases each in the ataxic and paralytic stages; it was present on both sides in 4 cases each in the three stages. Hypotonia, therefore, is more infrequent in the pre-ataxic stage.

Another symptom noted was paralysis of the smooth muscular fibres of the eye-lids, which are

supplied by the sympathetic system. The consequence of this is slight narrowing of the palpebral opening. Narrowing of the palpebral opening was found in 42 cases, exclusive of cases of paralysis of the third pair: in 17 of these cases it was on one side only (3 in the pre-ataxic, 6 in the ataxic, and 8 in the paralytic stage). In 25 cases it was double (3 in the first stage, 9 in the second, and 13 in the third).

Myosis was found to coexist with diminution of the palpebral opening: in subjects affected on one side only, 6 times; in those affected on both sides, 11 times. The frequency of this slight fall of the pupil increased progressively from the commencement to the paralytic period.

Another symptom, hitherto unknown, is deformity of the pupil of tabetics, which frequently ceases to be circular; it is often elliptic, its long diameter being from without inwards and from below upwards, symmetrically on both sides (14 cases); in a few cases it was transverse (11 cases), or in other directions. In all Berger found 32 cases in the pre-ataxic stage, 20 in the ataxic, and 5 in the paralytic, in which the form of the pupil differed considerably from the normal circular; in almost all cases this was combined with myosis. This phenomenon, says Berger, is strongly against the opinion that tabetic myosis depends on spasmodic stricture of the sphincter of the iris, and he rather thinks it due to paralysis of the iridal vessels—unequal paralysis in the different meridians. But myosis very often coexisting with paralysis of the muscle of accommodation, it seems incomprehensible, from the neighboring origin of the nerve fibres of the two intro-ocular muscles, and their common path, that one should be in an active state for several years, while the other is paralyzed.

The coexistence of myosis, diminution of intra-ocular tension, and slight narrowing of the palpebral opening, reminds one of the analogous symptoms that appear after section of the great sympathetic, and shows that this nerve plays an important rôle in the existence of certain ocular symptoms in tabes. In fact, Vulpian's students have found pathological alterations in the sympathetic of tabetics. But the possibility of each of these symptoms presenting itself alone shows that sympathetic alterations are not the cause, but that this nerve is the path of transmission of irritations from the cord to the eye.

LIVER-TISSUE EMBOLI.

In the *Deutsches Archiv für klinische Medizin* for April, Bd. 42, Hft. 5, are recorded three cases of this exceedingly rare pathological condition. The first two are reported by G. SCHMORL, of the Pathological Institute in Leipzig. His first case was that of a railway employé, who was crushed between two cars, the liver being ruptured. At the autopsy the right auricle was found to contain a brownish-red mass, which proved to be liver-tissue. The piece was of irregular shape, about 3.5 cm. long, about 3 broad, and 2 cm. thick, weighing 35 grams. Its upper surface was uneven, and covered with numerous particles of liver-tissue. In the right ventricle was a similar piece, a little larger, caught between the anterior papillary muscle and the anterior wall of the ventricle. Smaller pieces were found between the trabeculæ. The left ventricle contained an oval piece of liver-tissue "about the size of a bean." The foramen ovale was not closed, and was permeable to a medium-sized finger.

The whole pulmonary vascular system contained embolic masses of liver-tissue, but more in the right lung. The main branch to the right lung was completely plugged. In both lungs there was extensive fat-embolism from the liver-cells. The renal arteries also contained liver-emboli, even in the left kidney, and other emboli were found in the vessels in other parts of the body.

This case is especially interesting on account of the patent foramen ovale, through which the embolic material reached the left heart. A somewhat similar case is recorded in Cohnheim's *Vorlesungen*, in which an embolus from the iliac vein passed through the foramen ovale into the Sylvian artery, in the case of a woman 35 years old. Litten has also recorded a case (*Virchow's Archiv*, Bd. 80, S. 281,) in which portions of a thrombus of the right heart passed through the foramen into the right iliac artery.

Schmorl's second case was that of a man that fell four stories, and was taken up dead. The liver was ruptured, but there was no injury to the vena cava inferior. The anterior wall of the left ventricle was ruptured, as was the endocardial lining of the posterior wall. The right auricle and ventricle contained pieces of liver-tissue. The pulmonary artery, and its large and small branches, especially those of the lower right lobe, also contained plugs of liver-tissue. No fat-emboli

could be found, but the pulmonary capillaries contained liver cells.

Jürgens and von Recklinghausen have reported cases of liver-tissue embolism. Jürgens reported several cases of delirium tremens with extensive fat-embolism of the lungs, spleen and kidneys, in which liver-cells were found in the right heart and capillaries. The report does not state whether in these cases there was any injury to the liver that caused the wandering off of liver cells into the blood-vessels, but it must be concluded that such was the case. Von Recklinghausen's case was one of fat-embolism of the lungs containing liver-cells.

As a supplement to Schmorl's cases VON ZENKER reports, in the same journal, a case of gunshot wound of the liver and heart with liver-tissue embolism. At the autopsy liver-emboli were found in two branches of the right pulmonary artery. The carbine ball had passed through both ventricles, the lower lobe of the right lung, the liver, and had torn the vena cava inferior.

In Schmorl's first case the heart had stopped in systole; it is evident, therefore, that between the rupture of the liver and the cessation of cardiac action there must have been at least one beat of the heart, and probably more, else there could not have been such wide dissemination of portions of liver-tissue. The case shows the negative pressure in the heart, the amount of the suction-power of the heart, even with a ruptured vena cava inferior, since notwithstanding this rupture, there was but a comparatively small amount of blood in the abdominal cavity. The cases also show that the right lung is the site of predilection of pulmonary emboli.

THE WAVE OF SURGICAL PROGRESS.

There are complaints on many sides that the medical journals are filled with surgical literature. Certain it is that, no one need complain of the lack of surgical literature nowadays, since the greater part of the space of both European and American journals is devoted to surgery. The "wave of deep surgical wisdom" that Mr. Gregg says is passing over America to-day, is but a portion of the wave that has overflowed Europe. And it may be safely said that while this wave may have caused some little destruction, the preponderating effect has been in the highest degree beneficial.

And one of these benefits of the present surgical tendency is the stimulating effect it has had on the profession. To a certain extent medical men may be said to be working both ways—from first to second, and again from remote back to first principles; and the first principles to which we are rapidly tending, and in which there is so much of promise for the future, consist in the recognition of chemistry, organic and physiological especially, as the field in which the greater part of future medical work must be done. We must find out what is going on in that busy laboratory, the human body, and what changes will take place in its retorts and crucibles under given conditions.

A moment's reflection will show that the present ascendancy of surgery is in a large measure due to the work that has been done in chemistry of late years. We can not regard the preponderance of surgical work as in any sense an evil. Thousands of years are being added to the aggregate of human life by it. It indicates increased activity on the part of the profession, and increased activity means broadening on the intellectual side of the profession, which must be accompanied always by better judgment, less dogmatism, more modesty, better *morale*, and a better profession in every respect. It would seem that there must be less individual exclusiveness in an active, intellect-working profession, more sociability. Busy brain-workers have no time for private quarrels and jealous bickerings. The fact that many are working is an incentive to others, less energetic, to be at some kind of work. In so far as circumstances will permit, each one will go about the work most suited to his tastes. When new fields of work are opened there will be found workers to enter them and labor in them.

There is but little doubt that the present wave of surgical progress will, after a time, give way to one of another branch of medicine. The solid groundwork that is being laid by surgeons will remain—there will be no steps backward—but there must come, sooner or later, a wave of progress in preventive medicine and physiological chemistry, which latter has but a small foot-hold in this country now. Meanwhile, so far from being a cause for complaint, there is reason to be thankful that surgical wisdom has not knocked in vain at our doors.

DANGERS OF SILVER TRACHEOTOMY TUBES.

DOCENT DR. ST. SZCZ. ZALESKI, of Dorpat, has recently called attention to the fact that silver tracheotomy tubes are corroded by the secretions of the body, with which they come in contact. He relates a case in which a tube was left in the trachea for two years, and at the end of this time there was nothing left but a mere shell. Zaleski explains the chemical process by which the metal was dissolved by the continual action of the chlorides, that exist in almost all the secretions of the body, upon the metallic silver. Chloride of silver is thus formed, and is acted upon by the alkaline secretions, which contain ammonia and cyanides, in the same way as the sulphocyanide of potassium has the power of dissolving chloride of silver. Of course a part of this silver is expectorated, but it is probable that a large part is absorbed. Zaleski, in order to find how much of a tube is dissolved in a given time, performed tracheotomy upon a cat, and inserted a silver biliary fistula tube, which remained in until the cat died, a month later. The tube lost in this time .0056 gram, or .282 per cent. of its weight. Thus it is seen that not only silver pessaries in the vagina or silver tubes in biliary or gastric fistulæ, but silver tracheotomy tubes in the trachea can be dissolved, the metallic silver being taken up by the fluids of the body.

Is this gradual wearing away of silver detrimental to the body, and to what extent? We know that the long continued and constant internal use of silver preparations in very small doses ultimately produces argyria, a grave and dangerous affection. The cases recorded by Orfila, Fromman, Riemer, and Dittrich, show that the manifestation of the deposition of silver in the tissues by the occurrence of a grey discoloration of the skin takes some time, but the actual deposition of the metal in the tissues begins much sooner, producing latent argyria, during which there is no discoloration, though, as experiments on animals show, the health is affected. If now a silver tube weighing 10 to 16 grams be used, if only half of it be absorbed by the tissues, we have the conditions for the production of argyria. Again, we cannot lose sight of the fact that the irritant action of the dissolved silver upon the delicate mucous membrane of the air-passages. There is still another danger if the patient and his attendants be so negligent that

the tube is not cleansed and examined. The destructive action of the secretions will go on until the tube is worn down to a mere film—and the patient's life is jeopardized by the likelihood that the intratracheal portion will break off and asphyxiate the patient.

Zaleski thinks that the most suitable materials for tracheotomy tubes are gold, platinum, rock crystal, porcelain, glass or ivory; though the gold and platinum may be dissolved to a certain extent after a time, especially by the sulphuretted hydrogen which is sure to exist if disinfection is imperfect.

EDITORIAL NOTES.

PUBLICATION OF MEDICAL CASES.—The proprietor of a private asylum for the insane at Besançon; was recently mulcted in 500 francs fine and 2,000 francs damages for publishing the clinical history of a patient under her initial letters, and in such a way that her identity was easily recognized. The judges held that a medical man has no right to divulge matters confided to him in the exercise of his professional duties in such a manner as to permit the public to ascertain the identity of the patients.

BRITISH MEDICAL ASSOCIATION.—An excellent programme is announced for the meeting of this Association in Glasgow on August 7, 8, 9, and 10. In the way of amusements there will be excursions to Lanark and Falls of Clyde, Ayr and the Land of Burns, the Perthshire Highlands, Lochearnhead and Crieff, Callander and the Trossachs, Arran, Stirling, Bridge of Allan, and Dunblane Castle, to Rothesage and the Kyles of Bate, and to Loch Lomond.

ENGLISH PHYSICIANS IN SWITZERLAND.—The Swiss government has partly rescinded the order that English and other physicians shall not practice in Switzerland without a Swiss diploma. This is a matter of importance, not only for Switzerland, but for those that are in the habit of visiting, whether for health or recreation, "the playground of Europe."

LONGEVITY IN JAPAN.—Japan had, on January 1st, 1888, 38,507,177 people. Of these 1,085,001 were between 70 and 80 years old; 247,055 between 80 and 90; 12,220 between 90 and 100, and 97 over 100 years. Of the last there were 73

women and 24 men, two of the women being 109, and one 111 years old.

JAMBUL.—DR. GEORGE SUTTIE, of Detroit, says in the *British Medical Journal*, that syzygium jambolana and Eugenia jambolana are the same. Jambul has been recommended in diabetes, and the proper name for it, says Dr. Suttie, is Eugenia jambolana.

SUBLIMATE INJECTIONS IN LUPUS.—In a recent number of the *Gazzetta degli Ospitali* Dr. TANSINI reports a case of lupus hypertrophicus cured after twelve injections of a .5 to 1 per cent. solutions of corrosive sublimate, which caused no local nor constitutional irritation.

THE KENTUCKY STATE MEDICAL SOCIETY will hold its thirty-ninth annual meeting at Crab Orchard Springs, July 11, 12, and 13, 1888. A full and interesting programme has been prepared.

THE LOMBARD UNIVERSITY of Galesburg, Ill., recently conferred the honorary degree of Master of Arts upon Dr. Homer M. Thomas, of this City.

DR. MARY DURAND, director of the *Courrier Médical*, has been appointed member of the Commission of Public Hygiene and Health of Paris.

THE SOCIETY OF OBSTETRICS AND GYNECOLOGY OF VIENNA has been recently formed, under the Presidency of Breisky.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May, 23, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. A. JACOBI, of New York, read a paper on
THERAPEUTICS OF DIPHTHERIA.

Diphtheria is a contagious disease. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. What has been called follicular amygdalitis (or "tonsillitis") is diphtheria in many, perhaps most, instances. It is seldom dangerous to the patient. But the diphtheritic variety of follicular amygdalitis also is contagious. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there is as much diphtheria

out of doors as there is indoors; as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety, parents while complaining of a slightly sore throat, kiss their children. Wherever it is suspected it ought to be looked after. Where it is seen it ought to be isolated and treated, less perhaps for the sake of those who are sick, than of those who are in serious danger of being infected. This is the more necessary as this form is apt to last long and give rise to repeated attacks. But it is not only the mild variety which is liable to last long. Serious, undoubted cases are also apt to last for weeks, and some of them months. As long as they do persist they are contagious.

Those sick with diphtheria, severe or mild, must be isolated. If barely possible, the other children ought to be removed from the house. This can but rarely be done in the homes of the poor, in the densely populated districts. A great charity is still waiting for its consummation, viz., that of erecting buildings, dormitories and playrooms for those who should be temporarily exiled from their infected homes. The erection of a sufficient number of temporary homes would be a still greater blessing to the poor, and a greater protection to the public at large. If it be impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom windows during the night, in the most distant part of the house; during the winter in a lower floor. Their throats must be examined every day, and their rectal temperatures taken by the mother so that the physician may be called on the occurrence of but slight changes. The few minutes spent in this way are amply repaid by the safety they may accomplish. The attendants upon cases of diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick or dangerous to others, a long exposure affects him or a nurse to a greater or less degree.

The well children of a family in which there is diphtheria must not go to school or church. Schools must be closed when a number of pupils have been attacked; or better still, when there is an epidemic, though it may not yet have affected the school children to a great extent; the teachers ought to be taught how to examine throats, and directed to do so every morning, and send home those children who are suspected.

When an attack of diphtheria has made its appearance the hygienic condition of the house should be examined. A family with children ought to insist upon the occasional inspection of the throats of their servants; those with chronic pharyngeal catarrh must not be hired. A seamstress or laundress coming for an occasional day's work, sick nurses, children's nurses, and cooks, should be examined from time to time, the more

so the more such people are inclined to conceal slight troubles, for obvious reasons. In times of an epidemic every public place, theatre, ball-room, dining-hall and tavern should be treated like a hospital. Where there is a large conflux of people there are certainly many who carry the disease. Disinfection ought to be enforced at regular intervals. In this respect I can but repeat what I said in my treatise (p. 172) and Pepper's *Cyclopædia* (I, 697). Public vehicles must be treated in the same manner after a suspicious case has been carried; that it should be so when a case of smallpox has happened to be conveyed in them appears quite natural. Livery stable keepers who would be anxious to destroy the germ of smallpox in their coaches must learn that diphtheria is as dangerous a passenger as variola, and what is correct in the case of a poor hack is more so in a railroad car, whether emigrant or Pullman.

To what extent the infecting substance may cling to surroundings is best shown by the cases of diphtheria springing up in premises that had not seen diphtheria for a long time, but had not been interfered with, and best, perhaps, by a series of observations of auto-infection. When a diphtheritic case has been in a room for some time, the room, bedding, curtains, and carpets, are infected. The child is getting better, has a new attack, may again improve, and is again stricken down. Thus I have seen them die; but also improve immediately after being removed from that room or house. If barely possible, a child with diphtheria ought to change its room and bed every few days.

To other rules of protection and disinfection, both private and public, including the prohibition of public funerals, I allude, only for the purpose of referring to the admirable rules published in its *Bulletin* No. 10, of Sept. 6, 1879, by the National board of health, and copied in my treatise on diphtheria, New York, 1880, and my article on diphtheria in Pepper's *System of Practical Medicine*, vol. i., p. 698.]

Diphtheria will, as a rule, not attack a healthy integument, be this cutis or mucous membrane. The best preventive is, therefore, to keep the mucous membrane in a healthy condition. Catarrh of the mouth, pharynx, and nose must be treated in time. Many a chronic nasal catarrh, with big glands around the neck, require sometimes but two or three regular salt water injections (1:130) into the nose, if the children be large enough to do so. The addition of one per cent. of alum will often be found useful. This treatment however must be continued for many months, and may require years. The nasal spray of a solution of nitrate of silver, 1:500 or 1000, will accelerate the cure. The internal administration of the tincture of *pimpinella saxifraga* is an efficient remedy in subacute and chronic pharyngitis and laryngitis. I generally give it

to adults, diluted with equal parts of glycerine and water, a teaspoonful of the mixture every two or three hours, with the proviso that no water must be taken soon after.

Large tonsils must be resected in times when there is no diphtheria. During an epidemic every wound in the mouth is liable to become diphtheritic within a day, and such operations should be postponed if feasible. Scooping of the tonsils, for whatever cause, I have given up since I became better acquainted with the use, under cocaine, of the galvano-cautery. From one to four applications to each side, or to the post-nasal space, are usually sufficient for every case of enlarged tonsils or lacunar amygdalitis. It is advisable to cauterize but one side at a time, to avoid inconvenience in swallowing afterward, and to burn from the surface inward. Cauterization of the center of the tonsils may result in swelling, pain, and suppuration, unless the cautery is carried entirely to the surface; that means to say the scurf must be on, or extend to, the surface. Another precaution is to apply the burner cold, and heat it *in situ*. Nasal catarrh and proliferation of the mucous and submucous tissue may require the same treatment, but in my experience the cases which require it, are less frequent than those in which the tonsils need correction.

The presence of glandular swellings around the neck must not be tolerated. They, and the oral and mucous membranes, affect each other mutually. Most of them could be avoided, if every eczema of the head and face, every stomatitis and rhinitis resulting from uncleanness, combustion, injury, or whatever cause were relieved at once. A careful supervision of that kind would prevent many a case of diphtheria, glandular suppuration, deformity or phthisis.

For its salutatory effect on the mucous membrane of the mouth, chlorate of potassium, or sodium, which is still claimed by some to be a specific, or almost so, is counted by me amongst the preventative remedies. If it be anything more, it is in a case of diphtheria an adjuvant. It exhibits its best effects in the catarrhal and ulcerous condition of the oral cavity. In diphtheria it keeps the mucous membrane in a healthy condition or restores it to health. Thus it prevents the diphtheritic process from spreading.

Diphtheria is seldom observed on healthy, or apparently healthy, tissue. The pseudo-membrane is mostly surrounded by a sore, hyperæmic, œdematous mucous membrane. Indeed, this hyperæmia precedes the appearance of the diphtheritic exudation in almost every case. Many cases of throat disease occurring during an epidemic of diphtheria, are but those of pharyngitis, which under favorable circumstances may develop into diphtheria. These throat diseases are so very frequent during the reign of an epidemic, that in my first paper on diphtheria (Aug. 11 and 18, 1860,

Amer. Med. Times) I based my reasoning on 200 cases of genuine diphtheria, and 185 of pharyngitis, without a visible membrane.

These cases of pharyngitis, and such of stomatitis and pharyngitis accompanying the presence of membranes, are benefited by the local and general effect of chlorate of potassium. The surrounding parts being healthy or returning to health, the membrane remains circumscribed. The generally benign character of purely tonsillar diphtheria, which is apt to run its full course in from four to six days, has in this manner contributed to secure to chlorate of potassium the reputation of being a ready, *the*, remedy in diphtheria. The dose of the salt must not be larger than 15 grains (1 gram) for an infant a year old, not over 20 or 30 (1.5-2.0) for a child from three to five years, in the twenty-four hours. An adult must not take more than 1½ drachms (6 grams) daily. These amounts must not be given in a few large doses, but in repeated doses and short intervals. A solution of one part in sixty will allow a teaspoonful every hour, or half a teaspoonful every half hour in the case of a baby one or two years old.

There is no better proof of the non-existence of a specific in diphtheria than the fact that the pharmacopœia has been exhausted to find one, and new remedies, legitimate and illegitimate, are being recommended all the time as panaceas. While there are certain indications resulting from the characteristics common to all, every case of diphtheria must be treated on general principles, which must be applied to the prominent individual features. When there is a high temperature in the beginning, it requires all the tact of a good physician to judge of the advisability of reducing it by antifebriles, such as sponging, warm bathing, cold bathing, antipyrin, antifebrin, or the subcutaneous use of the carbamide of quinia. Convulsions may demand active treatment, such as chloroform inhalations, or chloral hydrate, internally or in the rectum. Vomiting, or other cerebral symptoms, may ask for liquids, or smaller or larger doses of opiates. A very quick and feeble pulse may require a few large doses of a heart stimulant, digitalis, strophanthus, or spartein in the very beginning.

Renal complications are frequent and occur early. The majority of cases terminate favorably, in some a large amount of albumin will be eliminated in the course of a few days and disappear shortly. But whether your individual case will be of that nature, you do not know, and in time of danger nothing must be taken for granted. Milk or farinaceous diet, plenty of water, or, better, Poland, Bethesda, Seltzer, Apollinaris, or Vichy, warm bathing, warm feet, a few good doses of calomel, a number of hourly or two-hourly small doses of opium which are better than those of digitalis, and nitro-glycerine, will often

prove beneficial. If a diffuse nephritis, such as is more frequently met with in scarlatina, be the result it impairs the prognosis and requires further treatment conducted on general principles.

To what extent local treatment, if it be possible to employ it, is effective, can best be seen on external diphtheritic surfaces, thus the cutis denuded by vesicatories, the inguinal regions sore with intertrigo, the vagina, circumcision wounds, or tracheal incisions. For these conditions, I am most pleased with the effect of iodol, or iodoform powdered, or one part with eight or ten of vaseline. Powders of subnitrate of bismuth, boric acid, or salicylic acid with fifteen or twenty-five its quantity of starch have not given me the same satisfaction.

The treatment of diphtheritic conjunctivitis requires nothing but local treatment. It consists in the application of small ice-bags, or iced cloths which must be changed every few minutes, and the frequent installation of a saturated solution of boric acid, with or without atropia.

The local treatment of the pseudo-membranes of the fauces is a subject of great importance. To look upon them as an excretion which needs no interference, is incorrect. If it were possible to remove or destroy them, it would be a great comfort; but they can be reached only in certain places, and just in those in which they do least harm. Pseudo-membranes on the tonsils are the least dangerous, for their lymph communication with the rest of the body is very scanty. Thus almost all forms of tonsillar diphtheria are amongst the most benign, at least as long as the process does not extend. Most cases of the kind run their mild course in from five to seven days, and it is just these that have given rise to the many proposals of tearing, scratching, cauterizing, swabbing, brushing, and burning.

The fact is that neither the galvano-cautery nor carbolic acid, nor tannin and glycerine, nor perchloride or subsulphate of iron can be applied with leisure and accuracy to the very membrane alone except in the cases of very docile and very patient children. In almost every case the surrounding epithelium is getting scratched off or changed and thus the diphtheritic deposit will spread. Besides, the membrane of the tonsil is changed surface tissue, as it always is wherever the epithelium is pavement, and not deposited upon the mucous membranes from which it might be easily detached. Whatever is done must be accomplished without violence of any kind. If nasal injections be found advisable they can be made to wash the posterior pharynx and the tonsils sufficiently, so as to render the special treatment directed to the throat absolutely useless. Besides, it is easier, and meets with less objection, and gives rise to less exhaustion than the forcible opening of the mouth. Were it possible to make local applications without difficulty, the

membrane may be brushed with tincture of iodine several times daily, or a drop of rather concentrated carbolic acid. Of powders I know only one, the application of which is not contraindicated, viz. calomel. Even this may irritate by its very form. Everything dry irritates and gives rise to cough or discomfort. Whatever has, besides, a bad taste or odor, such as sulphur, iodoform, or quinia, must be abhorred.

For the purpose of dissolving membranes papayotin, or papain, has been employed. It is soluble in twenty parts of water, and may be injected sprayed, or brushed on. I have used it in greater concentration, in two or four parts of water and glycerine, in the nose, throat, and through the tracheotomy tube, in the trachea. For the same purpose trypsin is preferred by others. The mode of its application is the reverse of indifferent. I have seen papayotin applied in powder, which resulted in the constant irritation of the throat while the patient otherwise was convalescent. The pharyngeal hyperæmia and slight exudation disappeared when mild alum washes were substituted.

Steam. Its inhalation is useful in catarrh of the mucous membranes, and in many inflammatory and diphtheritic affections. On mucous membranes it will increase the secretion and liquefy it, and thus aid in the throwing off of the pseudo-membranes. Its action is the more pronounced the greater the amount of muciparous follicles under or alongside a cylindrical or fimbriated epithelium. Thus it is that tracheo-bronchial diphtheria, so-called fibrinous bronchitis, is greatly benefited by it. Children affected with it I have kept in small bath rooms for days, turning on the hot water, and obliging the patient constantly to breathe the hot clouds. Several such cases I have seen recover with that treatment. Atomized *cold* water will never yield the same result. Nor have I seen the patent inhalers do much good. Where the surface epithelium is pavement rather than cylindrical, and but few muciparous follicles are present, and the pseudo-membrane is rather immersed in, and firmly coherent with, the surface—for instance on the tonsils and the vocal cords—the steam treatment is less appropriate. Moist heat in such cases is likely to favor the extension of the process by softening the hitherto healthy mucous membrane. It takes all the tact of the practitioner to select the proper cases for the administration of steam, not to speak of the judgment required to determine to what extent the expulsion of air from the steam moistened room or tent is permissible.

Steam can properly be mixed with medical vapors. In the room of the patient water is kept boiling constantly, over the fire place, provided the steam is prevented from escaping directly into the chimney, on a stove (the modern self-feeders are insufficient for that purpose, and abomina-

tions for every reason), over an alcohol lamp if we cannot do better, not on gas if possible, because of the large amount of oxygen which it consumes. Every hour a teaspoonful of oleum terebinthinæ, and perhaps also a teaspoonful of carbolic acid, is poured on the water and evaporated. The air of the room is filled with steam and vapors, and the contact with the sore surfaces and the respiratory tract is obtained with absolute certainty.

The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, but still, like that of the external integuments, increased by the introduction of water into the circulation. Therefore, drinking of large quantities of water, or water mixed with an alcoholic stimulant, must be encouraged. Over a thoroughly moistened mucous membrane the pseudo-membrane is more easily made to float, and macerate. It was for this purpose that pilocarpine, or jaborandi, was highly recommended. Guttman recommended it as a panacea in all forms of diphtheria. There is no doubt that the secretion of the mucous membrane is vastly increased by its internal application, and by repeated subcutaneous injections of the muriate or nitrate of the alkaloid, but the heart is enfeebled by its use. I have seen but few cases in which I could continue the treatment for a sufficient time. In many I had to stop it because after some days of persistent administration I feared for the safety of the patients. There will be but exceptional cases in which pilocarpine will be tolerated long enough to do good. It is one of the remedies by which we may cure our case and kill our patient.

Diphtheria of the nose is apt to terminate fatally unless energetic treatment is commenced at once.

This consists in persevering disinfection of the mucous surface. The disinfecting procedure must not be omitted long because of the general sepsis resulting from rapid absorption from the surface which is supplied with lymph ducts, and small superficial bloodvessels to an unusual extent. Disinfectant injections must be continued every hour, for one or more days. If they are well made, the consecutive adenitis, particularly that about the angles of the lower jaw, is soon relieved and the general condition improved. But there are cases in which not the lymph bodies are the main gates through which constitutional poisoning takes place, but the bloodvessels only. In the incipient stage of such cases the discharge from the nostrils is more or less sanguineous; in them the bloodvessels, thin and fragile, carry the poison inward with great rapidity.

Injections are unsuccessful in cases in which the whole nasal cavity is filled with membranous deposits to such an extent as to require forcible treatment. Sometimes it is difficult to push a silver probe through it. That procedure may be re-

peated, the probe dipped in carbolic acid, or wrapped in absorbent cotton moistened with carbolic acid of 50 or 90 per cent. After a while injections alone will suffice. But now and then the development of pseudo-membranes is very rapid, a few hours suffice to block the nostrils again, and the difficulty is the same.

The liquids to be injected must be warm and fairly mild. Solutions of chloride of sodium, 0.66 per cent., saturated solutions of boric acid, 1 part of sublimat., 35 of chloride of sodium and 5,000 of water, more or less, or lime water, or solutions of papayotin, will be found satisfactory. The object in view is partly that of washing out, and partly of disinfecting. Carbolic acid may be used in solutions of 1 per cent. or less. Its use requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

The nozzle of the syringe must be large, blunt and soft. I now use always a short stout glass syringe with soft rubber mounting in front.

When the children cannot or must not be raised, I employ the same solutions from a spoon, or a plain Davidson atomizer. These applications can be made while the children are lying down, every hour or very much oftener, without any or much annoyance. The nozzle must be large so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of covering the common nozzle with a short piece of India-rubber tubing.

For a day or two these injections of fluids or spray must be made hourly. It is not cruel to wake the children out of their septic drowsiness; it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* run up their syringe vertically and not horizontally, the fluid *will* return though the same nostril. On the successful injecting or spraying of the nares hangs every life in a case of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed. The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin and the child gently raised in bed by the person who is to make the injection. This person, sitting on the bed, steadies the patient's head against her chest while somebody else holds the patient's hands. The

syringe is introduced horizontally by the person sitting behind the patient and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears more gentleness is required, or the spray, or pouring in from a spoon, or minim dropper even, has to take the place of the injection. Many sins are committed in even doing this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected.

Which is the concentration in which antiseptic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. In the *American Journal of the Medical Sciences* for January, 1881, T. Mitchell Prudden proved that a solution of $\frac{1}{10}$ of 1 per cent. of carbolic acid prevents the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation, and Koch found that, though bacteria are not easily killed, their growth is stopped by a solution of 1 part of carbolic acid in 850, and their activity by one in 1,200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and naso-pharyngeal infection. The treatment consists in disinfection of the absorbing surfaces. Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of 1 part of carbolic acid to 10 of alcohol irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. After all, however, the readiest method of reducing the swelling of the glands and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, the scoop and concentrated carbolic acid must be freely used. In these cases hæmorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure, have rendered good service. Solutions of iron must be avoided, for the scurf formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart-failure and strangulation. The latter has its own indication, to which I shall not now allude. Heart-failure exhibits itself sometimes quite suddenly, but, as a rule, it is foreshadowed by a gradually increasing frequency, weakness of heart-beats and pulse and the equal length of the intervals between the feeble systole and diastole, and diastole and systole. This equality is always a dangerous symptom. Heart-failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of the septic decomposition of the blood, and the ill nutrition of the heart-muscle depending thereon, or the direct diphtheritic changes of the tissue, or both. These changes and dangers set in, sometimes, at a very early period. Thus whatever enfeebles must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, take their meals, and evacuate their bowels in a recumbent or semi-recumbent position: crying and worrying must be avoided; the room kept airy, and rather dark, so as to encourage sleep if the patient be restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture, or from exertion. Unless absolute rest be enforced, neither physician nor nurse has done his or her duty.

In no disease is the danger greater from the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very beginning. Digitalis, strophanthus, spartein, besides camphor, alcohol, and musk, must not be postponed until feebleness and collapse have set in. It is possible or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe, and advisable to use them at an early date. That is particularly necessary when antipyrin or antifebrin is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of spartein. An infant a year old will take one-tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed, is bad. There are cases that get well without treatment, but we do not know beforehand which they will be. No alleged mild case is safe until it has recovered. When heart failure sets in—and often it will occur in apparently mild

cases—our efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it, in septic diseases. A few ounces daily may suffice, but I have seen ten ounces of brandy or whisky, save children who had done badly with three and four. Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From 5 to 25 grs. may be given daily, as camphor water, or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is liable to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders, or with mucilage. When required at all it should be given in sufficient doses, and at short intervals. When ten or fifteen grains administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action, the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general, or is local, and then mostly cerebral. Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of 3 years may take daily, for a month, 3 grains or its equivalent; for instance, 1 grain of the extract. This is an indication on which I cannot dwell too much. Many of the acute, and most of the chronic diseases of all ages, do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply, and if possible, a single remedy only, but a better one to prescribe efficiently. A prescription paper with a single line on it looks well, but a really convalescent or well man, looks better.

There are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnia or other preparations of nux at all events. In ordinary cases a child of 3 years will take $\frac{1}{10}$ of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry or with hot water, or oil, or water and alcohol; and the use of both the interrupted and continuous currents, according to the known rules, and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnoea resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods,

but very frequently, and hypodermatic injections of sulphate of strychnia in more than text-book doses, and frequently repeated, will render good service. I remembr a case in which these, and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

Chloride of Iron.—The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as is its general effect therefore it must be given frequently, in hourly or half hourly doses, even every twenty or fifteen minutes. An infant of 1 year may take 3 or 4 grams a day, a child of 3 or 5 years 8 or 12. It must be mixed with water to such an extent, that the dose is half or a teaspoonful; $\frac{3j}{\text{in } \frac{5}{4}}$ allows half a teaspoonful every twenty minutes. No water must be drank after the medicine. As a rule it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhoea is a contraindication to preserving in its use, for nothing must be allowed to occur that reduces strength and vigor. A good adjuvant is glycerine, better than syrups. From 10 to 15 per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated neither. When diarrhoea sets in glycerine must be discontinued. Still these cases are rare; indeed, the stomach bears glycerine very much better than the rectum. In the latter, the presence of a small dose of glycerine is known sometimes to produce large evacuation, a result appropriated and utilized by an advertising nostrum monger.

I have seen so many bad cases to recover with chloride of iron, when treated after the method detailed above, that I cannot rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are such in which the main symptoms are those of intense sepsis, I should say such in which the iron and other rational treatment was not powerful enough to prevent the rapid progress of the disease. Children with naso-pharyngeal diphtheria, large glandular swelling, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides, those in which large doses only of stimulants, general and cardiac, can possibly promise any relief, are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both. Nor is iron sufficient or safe in those cases that are preëminently laryngeal. To rely on iron in membranous croup means waste and danger.

Mercury.—The first volume of *A System of Practical Medicine by American Authors*, which appeared in 1885, contains in an article on

diphtheria, written in 1884, the following remarks:

"If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before. My own experience with it has been encouraging, and so has that of some of my friends. Wm. Pepper gave one thirty-second of a grain of corrosive sublimate every two hours in bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—child of 5 years, respiration 70, pulse 160—large membrane 'evidently from the larynx' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1:5000 and in good doses. A baby, a year old, may take one-half grain every day many days in succession, with very little, if any, intestinal disorder, and with no stomatitis. A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membrane bear quite well a proportion of 1:2000 or 3000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a dram of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the cases not operated upon has no longer existed these five or six years, in my observation. The above figures were by no means taken from small numbers. For since 1860 I have tracheotomized more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand cases of membranous croup that were not operated upon at all. During the last six years I have seen no less than 200 cases, perhaps many more. Amongst them, recoveries have not been rare. In the practice of O'Dwyer, I have seen two cases of general and laryngeal diphtheria in the same family get well

without any operative procedure. Such recoveries have taken place in all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest daily dose was a gr. 0.25 (15 millig.) Grain 0.5 daily continued through 5 or 6, sometimes 8, 10, or even 12 days, has not been rare amongst children of from 3 to 6 years. the doses varied from gr. $\frac{1}{60}$ to $\frac{1}{40}$, and sometimes more. They are given every hour. They require the dilution in a tablespoonful of water, or other compatible fluid, for instance milk, in order to be quite innocuous. They are not liable to produce gastric or intestinal irritation. When the latter occurred, it was generally found that by some mistake the solution was as strong as 1:2000 or 1:3000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly on the time of its administration. As a rule, such complete stenosis as necessitates surgical interference, develops after days only. This necessity is often obviated by the remedy when given as detailed. When an operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy getting well as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen of New York physicians, some of whom have often performed tracheotomy, who can confirm the above statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the last having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of fibrinous bronchitis. It is there where it has been particularly effective. Still I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen getting well. After the rational and careful administration of solutions of hydrogyrum bichloride, local mercurial symptoms about gums, mouth, pharynx, and intestines are extraordinarily rare in infancy and childhood.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

*Antipyrin Injections in Ocular Therapeutics—
Contra-Indications of Antipyrin—Saccharin—
Treatment of White Swelling by Electricity.*

At a recent meeting of the Academy of Medicine, Dr. Grandelément, of Lyons, read a paper on the utility and the principal indications of *injections of antipyrin in ocular therapeutics*. He found that injections of antipyrin in the temple produced results more rapid and more certain than the administration of this substance by the stomach. It was only in exceptional cases that the author had occasion to associate the two modes of absorption.

Secondly we noticed, that when the injections should be useful and efficacious, improvement takes place from the first injection, in that case four or five injections ordinarily suffice to obtain all that can be expected of this substance. Dr. Grandelément stated that he had thus practiced more than 300 injections, in doses of 25 centigrams of antipyrin in 10 drops of distilled water with half a centigram of antipyrin in 10 drops of distilled water with half a centigram of the hydrochlorate of cocaine. The author never observed any abscess resulting, but there has always been produced in the injected region a slight swelling which lasted from six to eight days, and extended at times in the form of oedema to the lower lid. He thought that when the injections were efficacious, a good part of this efficacy is probably due to a sort of subcutaneous revulsion with analgesia of the skin at the part injected. The author concludes his paper with the following indications for these injections: 1. When pain is the principal element, particularly when it is not periorbital. 2. When the spasmodic element exists. 3. These injections favorably modify the greater part of the inflammatory processes of the globe of the eye, particularly if they are accompanied by ciliary pains. Moreover, their favorable action on the progress of the inflammation is the more evident in proportion as the pain is more acute.

At a discussion on the medicinal properties of antipyrin, Dr. Huchard brought to notice, at a recent meeting of the Société de Thérapeutique, the contra-indications of that substance, which is so much in vogue. He said that the drug should be used sparingly in diseases such as typhoid fever, in which the kidneys served as emunctories, as it diminished the secretion of urine. With this effect in view, he gave 8 grams a day to a woman suffering from meningo-myelitis, who passed from 24 to 28 litres in 24 hours. This quantity was reduced to 5 litres under the influence of antipyrin. The author, therefore, suggested the use of this drug in analogous cases,

THE DEATH OF DR. J. MILNER FOTHERGILL is announced. Probably few men were more widely known among English-reading physicians.

such as diabetes, for instance. When the kidneys are, however, diseased, antipyrin should no more be given than opium or the salicylate of soda, as in such cases, these substances being eliminated by the kidneys, might possibly be absorbed into the organism with toxic effects. Dr. Dujardin-Beaumetz and others confirmed this view, and related cases in which the urine of diabetic patients was notably diminished under the influence of antipyrin and a corresponding diminution of the sugar took place. As antipyrin sometimes causes disturbance of the stomach, Dr. Constantin Paul recommended the addition to it of the bicarbonate of soda. To the contra-indications, Dr. Huchard added that arterio-sclerosis should not be treated by antipyrin even when the kidneys are not affected. Some medical men thought that they had found in antipyrin a powerful hæmostatic, but after experimenting with it they found that it acted as such only when externally employed. In this latter case it proved most efficacious, and it was found that it also possessed most powerful antiseptic properties. It may be used in the form of a solution 1 to 20 parts or in powder, when it also relieves pain.

Saccharine is another substance that is becoming much in vogue, although for the present it is not much used as a medicinal agent. At a debate at the Société de Thérapeutique, Dr. Dujardin-Beaumetz extolled the advantages of this substance as a substitute for sugar in the alimentation of diabetic patients. The author stated that from his experience it was very much appreciated by these patients, as with it they enjoyed the sweet savor of sugar without having any of the inconveniences of the latter. It is preferred to glycerine, which has hitherto been the substitute for sugar. Some of the members present remarked that its use was being largely extended to industrial purposes, such as the manufacture of preserves and syrups for which glucose, often of an inferior quality, is employed. Dr. Dujardin-Beaumetz, however, thought that saccharin may safely be employed, as it had no noxious action on the system, but that nevertheless it is not, like sugar, an aliment, as it traverses the economy and is eliminated by the urine without being assimilated or transformed.

In a very interesting work by Dr. Léon Dancion on the *Treatment of White Swelling by Electricity*, the author summarizes as follows his conclusions on this mode of treatment which he has adapted for several years: 1. The results obtained till now by electricity applied to white tumors in full evolution, with or without fistulous tracts, show: (a) that it can arrest its progress; (b) that it can determine a regression of the fungous development; (c) that the part comprised might recuperate at least partially and sometimes to a great extent its integrity and its functions. 2. Although one can always gainsay the sense of

the ulterior evolution of an arthropathy, the power of electricity to check the progress of a white swelling at its origin seems undeniable. In any case the excellent effects produced by it in arthritis, whatever be its origin, it should be employed as a preventive means to all arthropathies in general, or at least to those of a suspicious nature. 3. The therapeutic power of electricity is due to its special antiphlogistic and entrophic property, that it acquires from the intimate relation which exists between the human electro-geny and the nervous function. A. B.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Ozone Treatment of Phthisis—Disposal of Sewage—Saline Aperients and Diet in Dysentery—Electrolysis in Gynecological Practice—Death of Dr. T. Harrington Tuke—Sir Andrew Clark.

The following was the experience of a well known medical man with the new remedy ozone, for consumption. The patient was a young lady far advanced in the disease. The symptoms were a hacking cough, almost entire loss of appetite and sleep, and not strength enough to walk across the room. Before using the remedy, the case was described to Dr. B. W. Richardson, who in the kindest manner advised as to the strength and duration of the inhalations. The oxygen was obtained from chlorate of potash in the ordinary way. In converting it into ozone the method was that recommended by Dr. Richardson, in which the proportion of ozone to atmospheric air was one in five, and this quantity was indicated by a divided scale on the side of a small gasometer which served for the inhaler. The patient had been under treatment for a month, and to quote the words of the medical attendant, "The effect was marvellous." The appetite is gained, the sleep calm and refreshing and altogether there seemed a very good prospect of recovery. It was anticipated that the inhalations would be followed by feverishness, or at least by an increase of temperature, but strange to say the clinical thermometer registered on the average 1.5° F. lower after the inhalations, which lasted fifteen minutes each. Dr. W. B. Richardson considers the ozone treatment as especially applicable to all germ diseases.

There has just been published as one of the "Professional Papers of the Corps of Royal Engineers" an interesting contribution to the important problem of how to dispose of the sewage of great towns. The treatment is alleged to occasion at once a chemical change by which the putrescible matter is destroyed as such matter and resolved into innocuous elements, and it is further alleged that this complete annihilation of dangerous products may take place either in the

public sewers or in each house without any change in the existing system of drainage and at trivial expense. The discovery is based upon the well known fact that water filtered through finely divided iron is purified. On the basis of these facts there was carried out a series of experiments whose result is the present discovery. There is produced by various chemical processes a liquid solution of iron of fixed strength. This iron liquor is introduced into the sewage in a quantity proportionate to the amount of putrescible matters believed to be present there, and the assertion is that it immediately dissolves these matters into their elements and that the fluid in the drain becomes clear water. For the purification of sewers the plan adopted is to place the iron liquor in a perforated porcelain cylinder, which is placed in a tank that receives a regulated supply of pure water. The iron liquor in the cylinder is taken up by the pure water at a known and easily calculable rate and thus charged with iron; the water escapes by an overflow pipe into the sewer.

In the town of Guildford, a ten-gallon tank was fixed and supplied with water from the town water-works, at the rate of fifteen gallons per hour. The disinfectant was placed in the tank and an overflow pipe was led from it into the adjacent sewer. The rate of solution was about 1,400 grs. of sulphate per hour. The apparatus was set at work at 2.40 per hour on Nov. 18, 1886. It was anticipated that several days would elapse before any decided change took place in the purity of the sewage and samples were taken every twelve hours. On the 19th of November, to the surprise of every one concerned, a clear stream free from any taint, was seen in issue from the outfall, and the smell which had been extremely offensive, had cleared. It is not concluded that this clear water is fit for the purposes that clear water is usually applied to, but it is alleged to be quite innocuous and to effect no perceptible change in the water of the rivers into which it may run. For the application to single houses the process requires only one or more small instruments which the inventor calls ferrometers and each of which will contain three pounds of iron solution, whose use can be regulated by simple working parts. The cost of the treatment is said to be very slight as compared to those now in use. Ferrometers have been adopted at Windsor Castle and are stated to be giving entire satisfaction.

Surgeon Nichols, of the Army medical staff, recommends a prolonged course of saline aperients, along with a nutritious, easily digested diet, in cases of chronic dysentery and its allies. In cases where the chronic is a sequel to a more or less recent acute attack, the disease is more obstinate and the treatment requires to be persevered in long after apparent recovery.

Dr. W. G. Steavenson, the well-known physician

of St. Bartholomew's Hospital, read a paper before the Obstetrical Society, devoted to advocating a more exclusive use of electrolysis in gynecological practice. He pointed out that this property of electricity was especially useful in the treatment of affections in parts difficult of access, and perhaps found its widest field for usefulness in the treatment of those diseases of women in which local applications were necessary. It was a more efficient and elegant way of applying caustic than any other. It could be most accurately localized, the amount used and the extent of tissue to be destroyed could be regulated, and the action could be commenced and arrested at any moment at the will of the operator.

Dr. T. Harrington Tuke, the well-known authority on insanity and general diseases of the brain, died on the 9th of last month. He was a member of several professional societies, and was formerly well known at the annual meetings of the British Medical Association.

Sir Andrew Clark is reported to have once made the remark: "I worked twelve years for bread, twelve years for butter, and twelve more for the luxuries of life." Sir Andrew, the other day, received a fee of £5,000 for going to Italy. Sir Andrew Clark's first acquaintance with Mr. Gladstone arose in connection with his visits as Mr. Clark to Mr. Gladstone's Convalescent Home, since when they have been great personal friends. He is stated to have been one of the first to adopt the now general plan of writing out elaborate dietaries for his patients.

G. O. M.

DOMESTIC CORRESPONDENCE.

MONUMENTS TO MEDICAL PATRIOTS.

Dear Sir: The members of the profession of medicine in the United States will do well to read the following paragraph from the *London Lancet* of May 12:

"At Milan on the 30th ult., a statue in bronze, the work of the great sculptor, Vela, was erected to AGOSTINO BERTANI, who as surgeon, medical legislator, and patriot deserved so well of Italy. Statesmen of every political school were present at the ceremony, and the Syndic of Milan, the Senator Negri, dwelt in a strain of hearty unaffected eloquence on the high aims, the pure philanthropy, and the scientific grasp of the man they commemorated. To sacrifice a brilliant professional career in order to act as medical head to the army of independence under Garibaldi; to keep abreast of the professional scholarship and practice of the day while tending the sick and wounded of the Italian 'Risorgiments'; to dedicate the evening of a stormy existence to the moulding and maturing of a great body of sani-

tary regulations tending to lighten and lengthen the lives which he helped to civic freedom—such was the peculiar merit of Bertani. He lived just long enough to complete his Hygienic Code, bequeathing the exposition and indication of its articles to his political friends; and it was a happy coincidence that scarcely was Vela's fine presentation of his stoic figure and keenly intellectual countenance unveiled when the Italian Senate put its seal of approval to his 'Codice Sanitario.'

Nor is this the only honor shown the name of the surgeon and sanitarian of the Italian Revolution. According to the *Lancet* of May 19, "A tablet has just been unveiled to his memory on the façade of that house in Genoa where he planned and set in motion the most brilliant of all Garibaldi's expeditions—that of the "Mille" or "Thomard," which added the two Societies to Italian unity. The following is a translation of the inscription: "Agostino Bertani, exile in Genoa from Lombardy, lived here nobly employed in the advancement of science and in the service of patriotism from 1853 to 1866. True to all the high-souled undertakings whence the new Italy took breath and form, in this house he endued with life and impulse, and from this house he launched the memorable organizing committee which aroused and inspired the armed thousand on their path of progress, with Garibaldi for their leader, from Marsala to the Volturmo. Sacred be the walls in which so great a history resides."

Since Italy has so promptly and conspicuously honored its patriot physician, it appears anything but creditable that American medical men should hesitate to carry into effect, without another year of delay, the projected monument to that greatest of patriot physicians, BENJAMIN RUSH.

In my recent report to the American Medical Association, as Chairman of the Rush Monument Committee, published in *THE JOURNAL* of June 2, I quoted the example of the State Medical Society of California, which, at its annual meeting on the 18th of April, having taken a recess for the purpose, contributed \$106 toward the monument, that sum being the equivalent of the number of members in attendance. I was disappointed that the twelve hundred and more members of the American Medical Association in attendance at Cincinnati did not likewise contribute \$1200 to the project which the Association has so often commended and endorsed; and I now beg most earnestly to renew the appeal made in that report that every medical man and woman, on reading this statement, will at once inclose his and her subscription to the Treasurer of the Monument Fund, Dr. Joseph M. Toner, at 615 Louisiana Avenue, Washington, D. C., and that every one so doing will further personally interest himself, and herself, in obtaining a similar subscription from each friend and acquaintance in the ranks of the profession in his or her neighborhood.

The Committee have entertained the hope that the *one hundred thousand* members of the profession of Medicine in the United States would contribute *at least* \$50,000 towards erecting a monument to this "greatest American physician" who has ever lived, on the Mall at Washington at the approach to the new Army Medical Library and Museum, which would be worthy of the man commemorated, in keeping with the splendid medical edifice there erected, and creditable to the profession in America. The Congress of the United States will, undoubtedly, as in other instances, contribute a handsome pedestal for the monument, and it will be a subject of mortification, instead of pride, if the figure surmounting it should be an insignificant one through the negligence or indifference of the physicians of the country. I beg, therefore, on behalf of the committee to make this last appeal to every reader of *THE JOURNAL* to mail *at once* his one dollar subscription, or his larger donation, to the Treasurer and to actively interest himself in obtaining a similar subscription or donation from all his professional neighbors and acquaintances.

Very respectfully, etc.,

ALBERT L. GIBON, M.D.,

Chairman of Rush Monument Committee.

ACUTE RHEUMATISM IN A CHILD TWO MONTHS OLD.

Dear Sir:—In a recent issue of *THE JOURNAL* I notice the report of a case of acute rheumatism seen in a child only 11 days old.

This calls to mind a case that I saw during the month of April of this year—the child being *two months* old. I mistook the complaint, the first thirty-six hours, as being one of intestinal trouble, and so attributed the child's crying and fret to that cause. On a subsequent (third) visit, my attention was called to the child's swollen and red left shoulder, and that it would not permit the slightest movement of that arm without crying. Of course there was a complete change in the treatment. I had the arm and side bathed freely several times a day with wintergreen oil, preferring to give the salicylic acid in that form. The little patient showed signs of improvement in twenty-four hours, combined with an internal alkaline treatment, and $\frac{1}{2}$ -drop doses of the tincture of aconite root. The swelling attacked, as it left the shoulder, both wrists, and the hands looked like miniature puff-balls, though the fever and pain steadily lessened until, by the end of four days more, the patient was discharged.

This is the only case of rheumatism that I have seen in a patient under 1 year of age; neither have I heard of one, from my *confrères*, in an infant so young. Yours very truly,

C. HENRI LEONARD, M.D.

Detroit, Mich., June 20, 1888.

BOOK REVIEWS.

LESIONS OF THE VAGINA AND PELVIC FLOOR, with special reference to Uterine and Vaginal Prolapse. By B. E. HADRA, M.D., of Austin, Texas. With 83 illustrations. 8vo, pp. 329. Philadelphia: Records, McMullin & Co. Chicago: W. T. Keener.

This volume may be regarded as a sort of companion to Croom's "Minor Gynecological Operations," edited by Dr. McMurtry. It is a carefully written account of the lesions of the vagina and pelvic floor, embodying and representing the best teachings of the present day, though the work is by no means a mere compilation. The author writes with the conviction of experience, and in a pleasing style.

It may be mentioned that in speaking of the prevention of lesions of the vagina and pelvic floor Dr. Hadra says that one of the points in the prevention of them is *asepsis*. "At least asepsis of hands and instruments we should expect of doctors and midwives, and the neglect of such precautions should be considered criminal before every judicial court of our country." From this the reader would at once suspect that the author is in favor of immediate treatment of lesions acquired during parturition, since this is almost a corollary to antiseptic or aseptic midwifery. And on the next page the author says: "The great frequency and importance of lesions in these parts should cause the profession to adopt" the immediate treatment of lesions acquired in parturition. "A moderate percentage of failures should not deprive the woman of the benefit of the doubt."

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES; A Yearly Report of the Progress of General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOUS, M.D., etc., of Philadelphia, and Seventy Associate Editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Series of 1888. Vols. V. Vol. I, 8vo, pp. xv-541. Philadelphia and London: F. A. Davis, Publisher. 1888.

The first volume of this series opens with a paper on "Diseases of the Brain and Spinal Cord," by Dr. E. C. Seguin, of New York, covering 111 pages. Drs. Charles K. Mills and J. Hendrie Lloyd, of Philadelphia, contribute the paper on "Peripheral Nervous Diseases and General Neuroses," which is illustrated by a map showing the geographical distribution of Beri-beri. Some of the "Diseases of the Heart and Pericardium" are discussed by Dr. A. L. Loomis. Dr. James C. Wilson, in his usual clear style, writes of "Fevers," Dr. Wm. H. Thompson of "Diseases

of the Mouth, Stomach, Pancreas and Liver," Dr. W. W. Johnston of "Diseases of the Intestines and Peritoneum," Dr. Joseph Leidy of "Animal Parasites and their Effects," Dr. John Guit  ras of "Diseases of the Blood and Spleen, Tuberculosis and Scrofula," Dr. N. S. Davis of "Rheumatism and Gout," Dr. James Tyson of "Diabetes and Diseases of the Suprarenal Capsules," Dr. Francis Delafield of "Diseases of the Kidneys and Bladder," Dr. Tyson of "Urinalysis, Chyluria and H  moglobinuria," and Dr. E. C. Spitzka of "Psychological Diseases."

This volume, it is needless to say when we look at the names of the contributors, lacks nothing that could be desired.

Volume II of the series opens with a paper on "Surgery of the Brain and Nerves," by Dr. Senn. Dr. J. Ewing Mears contributes a paper on "Surgery of the Abdomen," and Dr. Charles B. Kelsey one on "Diseases of the Rectum and Anus." Dr. E. L. Keyes writes of the "Surgical Diseases of the Genito-Urinary Apparatus in the Male," Dr. John A. Packard on "Diseases and Injuries of Arteries and Veins," Dr. Lewis A. Stimson on "Fractures, Dislocations, and Sprains," Dr. P. S. Conner of "Amputations, Excisions and Plastic Surgery; Diseases of Bones and Joints," Dr. Hunter McGuire of "Gunshot and Punctured Wounds," Dr. John Guit  ras on "Surgical Tuberculosis, Abscess, Carbuncle, etc.," Dr. Arthur Van Harlingen on "Diseases of the Skin," the good colored plates of which have been rather awkwardly folded in. Dr. Morris Longstreth contributes an article on "Tumors," Drs. F. R. Sturgis and A. F. Buechler the paper on "Venereal Diseases," Dr. Christopher Johnston the one on "Surgical Diseases," Dr. Henry M. Lyman the one on "An  sthetics," and Dr. D. Hayes Agnew the one on "Surgical Diagnosis."

The paper on "Diseases of the Skin" shows the progress being made by dermatologists. The work in this field has been very great within the last two years, especially in the therapeutics of skin diseases.

A MANUAL OF MINOR GYNECOLOGICAL OPERATIONS. By J. HALLIDAY CROOM, M.D., F.R.C.P.E., F.R.C.S.E., etc. First American, from the second Edinburgh Edition. Revised and enlarged by LEWIS S. MCMURTRY, A.M., M.D., etc. With numerous illustrations. 8vo, pp. 228. Philadelphia: Records, McMullin & Co. 1888. Chicago: W. T. Keener.

Surgeons and gynecologists have been so much occupied of late years in writing of the larger gynecological operations that the stepping-stones to gynecology—the minor operations have had but little place in literature. This hiatus in gynecological literature has been filled by this book, from the pens of two men—one in Great Britain, the other in America—both admirably qualified

for the work. Dr. Croom is well-known on this side the Atlantic, both as a writer and an operator, and it does not detract from his reputation to say that the American editor of the work is equally well-known.

The chapters of Part I, Diagnostic, of the book are on: Vaginal examinations, the Rectum, the Bladder, the Speculum, the Sound, Volsella and Tenacula, Dilatation of the Cervix Uteri with Tents, the Aspirator. In Part II, Therapeutics, the chapters are on: the Vulva, Vagina, Urethra and Bladder, Cervical Applications, Intra-uterine Therapeutics. In addition to those Dr. McMurtry has added an Introduction and an excellent chapter on Laparotomy. The book is a safe and complete guide to the performance of minor gynecological operations.

MISCELLANEOUS.

BAD PRESCRIBING AND STILL WORSE DISPENSING.—The writer was recently summoned as a witness in a New York Court, and heard the following case:

A physician gave a patient for colic $\frac{1}{2}$ of a grain of sulphate of morphine by hypodermic solution in the walls of the abdomen, and gave him a prescription for "Mistura Squibb $\frac{3}{2}$ " to be taken as directed. The verbal directions given with this were that if, on reaching home, the man's pain was better, he should take none. If about the same, take a teaspoonful; if worse, take two teaspoonfuls. In a few minutes after the man left it, the pharmacist came to the physician's office to ask what "Mistura Squibb" was, or what was meant by it. The physician gave him the formula for the common compound tincture of opium or diarrhoea mixture. He knew what that was, and went off to dispense it. A short time after he came to the physician again, and said he had made a great mistake by having dispensed the compound solution of opium, a preparation six times stronger than that intended, and containing a proportion of opium equivalent to about $7\frac{1}{2}$ grains of sulphate of morphine to the fluid-ounce.

They at once sent for the patient to come to the pharmacist's store, when they found he had taken two teaspoonfuls of the compound solution of opium, about equivalent to 2 grains of sulphate of morphine, after having had $\frac{1}{2}$ of a grain by hypodermic injection. The gravity of the case was at once realized, and very vigorous, proper measures were adopted to counteract the opium; and after two physicians walking and dragging the patient through the streets all night with occasional bowls of strong coffee—keeping near to a large hospital where a battery was in readiness in case the respiration should entirely fail—signs of improvement began. Then in a few hours more the danger was past.

It seems altogether inexcusable for any physician to write such a line as that above quoted and issue it as a prescription, because it really indicates nothing, and means nothing that any pharmacist is bound to know, or can in any way be responsible for not knowing. If physicians, by thoughtless habits abbreviate and curtail their names so that they signify nothing with definiteness or safety—and will use names of persons instead of things, or proper names as indefinite adjectives—they not only discredit themselves, but also their profession, and when they get into the Courts they can expect no mercy.

The pharmacist in this case did exactly what was right, and took the only proper course open to him, when he went to the physician with his nondescript prescription,

for an explanation, and the physician then did the best he could do by giving him the formula for it. But, after this, the pharmacist went back and committed the almost criminal blunder of dispensing a solution instead of a tincture, the one six times stronger than the other—with the formula for the weaker one in his hand, and the label of the stronger one on his bottle, with a nearly fatal result.—*Squibb's Ephemeris*, June, 1888.

THE HYGIENIC PROTECTION OF RAILWAY PASSENGERS DURING THE COMING SUMMER.—Dr. Rauch, Secretary of the Illinois State Board of Health, addresses the following circular to the railway managers of Illinois:

The Board directs me to advise you that it is deemed desirable before the advent of warm weather to secure such care of railway stations and grounds, and of railway travel, as may tend to improve the sanitary condition and comfort of passengers generally, and specifically to limit the danger of any epidemic contagious disease.

Although there seems to be no immediate cause for alarm as to Asiatic cholera, the germs of that disease still exist in some parts of Europe whence large numbers of immigrants are constantly arriving in this country; and it now prevails as an epidemic in Chili, Brazil, and probably elsewhere in South America. Until it has died out in the countries with which the United States has direct commercial intercourse, it will not be prudent to relax vigilance, nor to omit proper precautions.

We had a narrow escape last fall from the introduction of this disease, and there is no telling what may happen during the summer.

The cleanly condition of water-closets on cars and at stations, also of privies, and the purity of drinking-water supplies for passengers and employes are matters of the first importance in this connection. At many of the small stations the conditions which obtain in these respects are far from satisfactory. When privies are used they should be kept clean by constant attention. Vaults should be emptied at proper intervals, the contents disposed of so as to prevent further nuisance, and efficient disinfectants should be freely and continually used. Explicit instructions on these points will be furnished by the Board whenever requested.

Interruption of railway travel and traffic may be prevented, and the comfort and welfare of the travelling public will be promoted by good sanitary conditions, and the Board will cheerfully coöperate with you to secure these ends.—*Sanitary News*.

HEALTH IN MICHIGAN IN MAY, 1888.—For the month of May, 1888, compared with the preceding month, the report indicates that consumption and measles increased, and that influenza and neuralgia decreased in prevalence.

Compared with the preceding month, the temperature in the month of May, 1888, was much higher, the absolute humidity much more, the relative humidity about the same, and the day and the night ozone slightly more.

Compared with the average for the month of May in the nine years 1879–1887, measles were more prevalent, and intermittent fever, remittent fever, diphtheria, consumption of lungs, and diarrhoea were less prevalent in May, 1888.

For the month of May, 1888, compared with the average of corresponding months in the nine years, 1879–1887, the temperature was lower, the absolute humidity was less, the relative humidity slightly more, the day and the night ozone were much less.

Including reports from regular observers and others, diphtheria was reported present in Michigan in the month of May, 1888, at twenty-three places, scarlet fever at fifty-four places, typhoid fever at fourteen places, and measles at twenty-four places, and small-pox at one place.

Reports from all sources show diphtheria reported at three places more, scarlet fever at eleven places more, typhoid fever at one place less, and measles at nineteen places more in the month of May, 1888, than in the preceding month.

BOOK REVIEWS.

LESIONS OF THE VAGINA AND PELVIC FLOOR, with special reference to Uterine and Vaginal Prolapse. By B. E. HADRA, M.D., of Austin, Texas. With 83 illustrations. 8vo, pp. 329. Philadelphia: Records, McMullin & Co. Chicago: W. T. Keener.

This volume may be regarded as a sort of companion to Croom's "Minor Gynecological Operations," edited by Dr. McMurtry. It is a carefully written account of the lesions of the vagina and pelvic floor, embodying and representing the best teachings of the present day, though the work is by no means a mere compilation. The author writes with the conviction of experience, and in a pleasing style.

It may be mentioned that in speaking of the prevention of lesions of the vagina and pelvic floor Dr. Hadra says that one of the points in the prevention of them is *asepsis*. "At least asepsis of hands and instruments we should expect of doctors and midwives, and the neglect of such precautions should be considered criminal before every judicial court of our country." From this the reader would at once suspect that the author is in favor of immediate treatment of lesions acquired during parturition, since this is almost a corollary to antiseptic or aseptic midwifery. And on the next page the author says: "The great frequency and importance of lesions in these parts should cause the profession to adopt" the immediate treatment of lesions acquired in parturition. "A moderate percentage of failures should not deprive the woman of the benefit of the doubt."

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES; A Yearly Report of the Progress of General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOUS, M.D., etc., of Philadelphia, and Seventy Associate Editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Series of 1888. Vols. V. Vol. I, 8vo, pp. xv-541. Philadelphia and London: F. A. Davis, Publisher. 1888.

The first volume of this series opens with a paper on "Diseases of the Brain and Spinal Cord," by Dr. E. C. Seguin, of New York, covering 111 pages. Drs. Charles K. Mills and J. Hendrie Lloyd, of Philadelphia, contribute the paper on "Peripheral Nervous Diseases and General Neuroses," which is illustrated by a map showing the geographical distribution of Beri-beri. Some of the "Diseases of the Heart and Pericardium" are discussed by Dr. A. L. Loomis. Dr. James C. Wilson, in his usual clear style, writes of "Fevers," Dr. Wm. H. Thompson of "Diseases

of the Mouth, Stomach, Pancreas and Liver," Dr. W. W. Johnston of "Diseases of the Intestines and Peritoneum," Dr. Joseph Leidy of "Animal Parasites and their Effects," Dr. John Guit  ras of "Diseases of the Blood and Spleen, Tuberculosis and Scrofula," Dr. N. S. Davis of "Rheumatism and Gout," Dr. James Tyson of "Diabetes and Diseases of the Suprarenal Capsules," Dr. Francis Delafield of "Diseases of the Kidneys and Bladder," Dr. Tyson of "Urinalysis, Chyluria and H  moglobinuria," and Dr. E. C. Spitzka of "Psychological Diseases."

This volume, it is needless to say when we look at the names of the contributors, lacks nothing that could be desired.

Volume II of the series opens with a paper on "Surgery of the Brain and Nerves," by Dr. Senn. Dr. J. Ewing Mears contributes a paper on "Surgery of the Abdomen," and Dr. Charles B. Kelsey one on "Diseases of the Rectum and Anus." Dr. E. L. Keyes writes of the "Surgical Diseases of the Genito-Urinary Apparatus in the Male," Dr. John A. Packard on "Diseases and Injuries of Arteries and Veins," Dr. Lewis A. Stimson on "Fractures, Dislocations, and Sprains," Dr. P. S. Conner of "Amputations, Excisions and Plastic Surgery; Diseases of Bones and Joints," Dr. Hunter McGuire of "Gunshot and Punctured Wounds," Dr. John Guit  ras on "Surgical Tuberculosis, Abscess, Carbuncle, etc.," Dr. Arthur Van Harlingen on "Diseases of the Skin," the good colored plates of which have been rather awkwardly folded in. Dr. Morris Longstreth contributes an article on "Tumors," Drs. F. R. Sturgis and A. F. Buechler the paper on "Venereal Diseases," Dr. Christopher Johnston the one on "Surgical Diseases," Dr. Henry M. Lyman the one on "An  sthetics," and Dr. D. Hayes Agnew the one on "Surgical Diagnosis."

The paper on "Diseases of the Skin" shows the progress being made by dermatologists. The work in this field has been very great within the last two years, especially in the therapeutics of skin diseases.

A MANUAL OF MINOR GYNECOLOGICAL OPERATIONS. By J. HALLIDAY CROOM, M.D., F.R.C.P.E., F.R.C.S.E., etc. First American, from the second Edinburgh Edition. Revised and enlarged by LEWIS S. MCMURTRY, A.M., M.D., etc. With numerous illustrations. 8vo, pp. 228. Philadelphia: Records, McMullin & Co. 1888. Chicago: W. T. Keener.

Surgeons and gynecologists have been so much occupied of late years in writing of the larger gynecological operations that the stepping-stones to gynecology—the minor operations have had but little place in literature. This hiatus in gynecological literature has been filled by this book, from the pens of two men—one in Great Britain, the other in America—both admirably qualified

for the work. Dr. Croom is well-known on this side the Atlantic, both as a writer and an operator, and it does not detract from his reputation to say that the American editor of the work is equally well-known.

The chapters of Part I, Diagnostic, of the book are on: Vaginal examinations, the Rectum, the Bladder, the Speculum, the Sound, Volsella and Tenacula, Dilatation of the Cervix Uteri with Tents, the Aspirator. In Part II, Therapeutics, the chapters are on: the Vulva, Vagina, Urethra and Bladder, Cervical Applications, Intra-uterine Therapeutics. In addition to those Dr. McMurtry has added an Introduction and an excellent chapter on Laparotomy. The book is a safe and complete guide to the performance of minor gynecological operations.

MISCELLANEOUS.

BAD PRESCRIBING AND STILL WORSE DISPENSING.—The writer was recently summoned as a witness in a New York Court, and heard the following case:

A physician gave a patient for colic $\frac{1}{4}$ of a grain of sulphate of morphine by hypodermic solution in the walls of the abdomen, and gave him a prescription for "Mistura Squibb $\frac{5}{2}$ " to be taken as directed. The verbal directions given with this were that if, on reaching home, the man's pain was better, he should take none. If about the same, take a teaspoonful; if worse, take two teaspoonfuls. In a few minutes after the man left it, the pharmacist came to the physician's office to ask what "Mistura Squibb" was, or what was meant by it. The physician gave him the formula for the common compound tincture of opium or diarrhoea mixture. He knew what that was, and went off to dispense it. A short time after he came to the physician again, and said he had made a great mistake by having dispensed the compound solution of opium, a preparation six times stronger than that intended, and containing a proportion of opium equivalent to about $7\frac{1}{2}$ grains of sulphate of morphine to the fluid-ounce.

They at once sent for the patient to come to the pharmacist's store, when they found he had taken two teaspoonfuls of the compound solution of opium, about equivalent to 2 grains of sulphate of morphine, after having had $\frac{1}{4}$ of a grain by hypodermic injection. The gravity of the case was at once realized, and very vigorous, proper measures were adopted to counteract the opium; and after two physicians walking and dragging the patient through the streets all night with occasional bowls of strong coffee—keeping near to a large hospital where a battery was in readiness in case the respiration should entirely fail—signs of improvement began. Then in a few hours more the danger was past.

It seems altogether inexcusable for any physician to write such a line as that above quoted and issue it as a prescription, because it really indicates nothing, and means nothing that any pharmacist is bound to know, or can in any way be responsible for not knowing. If physicians, by thoughtless habits abbreviate and curtail their names so that they signify nothing with definiteness or safety—and will use names of persons instead of things, or proper names as indefinite adjectives—they not only discredit themselves, but also their profession, and when they get into the Courts they can expect no mercy.

The pharmacist in this case did exactly what was right, and took the only proper course open to him, when he went to the physician with his nondescript prescription,

for an explanation, and the physician then did the best he could do by giving him the formula for it. But, after this, the pharmacist went back and committed the almost criminal blunder of dispensing a solution instead of a tincture, the one six times stronger than the other—with the formula for the weaker one in his hand, and the label of the stronger one on his bottle, with a nearly fatal result.—*Squibb's Ephemeris*, June, 1888.

THE HYGIENIC PROTECTION OF RAILWAY PASSENGERS DURING THE COMING SUMMER.—Dr. Rauch, Secretary of the Illinois State Board of Health, addresses the following circular to the railway managers of Illinois:

The Board directs me to advise you that it is deemed desirable before the advent of warm weather to secure such care of railway stations and grounds, and of railway travel, as may tend to improve the sanitary condition and comfort of passengers generally, and specifically to limit the danger of any epidemic contagious disease.

Although there seems to be no immediate cause for alarm as to Asiatic cholera, the germs of that disease still exist in some parts of Europe whence large numbers of immigrants are constantly arriving in this country; and it now prevails as an epidemic in Chili, Brazil, and probably elsewhere in South America. Until it has died out in the countries with which the United States has direct commercial intercourse, it will not be prudent to relax vigilance, nor to omit proper precautions.

We had a narrow escape last fall from the introduction of this disease, and there is no telling what may happen during the summer.

The cleanly condition of water-closets on cars and at stations, also of privies, and the purity of drinking-water supplies for passengers and employes are matters of the first importance in this connection. At many of the small stations the conditions which obtain in these respects are far from satisfactory. When privies are used they should be kept clean by constant attention. Vaults should be emptied at proper intervals, the contents disposed of so as to prevent further nuisance, and efficient disinfectants should be freely and continually used. Explicit instructions on these points will be furnished by the Board whenever requested.

Interruption of railway travel and traffic may be prevented, and the comfort and welfare of the travelling public will be promoted by good sanitary conditions, and the Board will cheerfully coöperate with you to secure these ends.—*Sanitary News*.

HEALTH IN MICHIGAN IN MAY, 1888.—For the month of May, 1888, compared with the preceding month, the report indicates that consumption and measles increased, and that influenza and neuralgia decreased in prevalence.

Compared with the preceding month, the temperature in the month of May, 1888, was much higher, the absolute humidity much more, the relative humidity about the same, and the day and the night ozone slightly more.

Compared with the average for the month of May in the nine years 1879-1887, measles were more prevalent, and intermittent fever, remittent fever, diphtheria, consumption of lungs, and diarrhoea were less prevalent in May, 1888.

For the month of May, 1888, compared with the average of corresponding months in the nine years, 1879-1887, the temperature was lower, the absolute humidity was less, the relative humidity slightly more, the day and the night ozone were much less.

Including reports from regular observers and others, diphtheria was reported present in Michigan in the month of May, 1888, at twenty-three places, scarlet fever at fifty-four places, typhoid fever at fourteen places, and males at twenty-four places, and small-pox at one place.

Reports from all sources show diphtheria reported at three places more, scarlet fever at eleven places more, typhoid fever at one place less, and measles at nineteen places more in the month of May, 1888, than in the preceding month.

PRIZE STUDIES OF TORNADOES.—The *American Meteorological Journal*, desiring to direct the attention of students to tornadoes, in hopes that valuable results may be obtained, offers the following prizes:

For the best original essay on tornadoes or description of a tornado, \$200 will be given.

For the second best \$50.

And among those worthy of special mention \$50 will be divided.

The essays must be sent to either of the editors, Professor Harrington, Astronomical Observatory, Ann Arbor, Michigan, or A. Lawrence Rotch, Blue Hill Meteorological Observatory, Readville, Mass., U. S. A., before the first day of July, 1889. They must be signed by a *nom de plume*, and be accompanied by a sealed envelope addressed with same *nom de plume*, and enclosing the real name and address of the author. Three independent and capable judges will be selected to award the prizes; and the papers receiving them will be the property of the journal offering the prizes. A circular giving fuller details can be obtained by application to Prof. Harrington.

ASPHALTE PAVEMENTS AND THE PUBLIC HEALTH.—The vapor of tar has been supposed to be beneficial in a number of disorders, but Dr. Edmund J. Mills, of the Glasgow Technical College, has written a short note on the injurious effects of tar vapors so copiously discharged on our streets while asphalt road-mending is going on. It is said that the injurious effects of these fumes is perfectly well known at tar works, where the pitch is always cooled down in a closed chamber prior to casting in blocks. Casual inquiries have convinced him that the operations of road repair in Glasgow have been, during the last three weeks, the cause of a great deal of totally unnecessary illness, the leading symptoms of which are nausea and giddiness. He himself has been three times prostrated in this way, and has been thereby debarred from pursuing his ordinary professional work until these repairs cease. In view of the serious inconvenience from which many more must have suffered, it is to be hoped that the use of pitch in the future may be dispensed with, as the operation of road-mending can, if desired, be conducted without any offence whatever to the public health.—*British Medical Journal*, May 12, 1888.

MEDICAL PRACTICE IN CANADA.—The *Toronto Mail*, of May 19, says:

The Ontario College of Physicians and Surgeons has built a high wall around and about the practice of medicine in this province. Now and then they add another tier, until the struggle to get over the wall is hardly worth the exertion it costs—at least, that is what is being said by many who are anxious to get inside. Occasionally a kicker appears on the scene, shines in full splendor for a brief day, and then is snuffed out in the most unceremonious manner. One of this class illuminated the Police Court yesterday. His name is J. H. Stewart, and he appeared to answer a charge of practicing as a medical man without the necessary sheep's skin. The case went against him, and he was fined \$100, with the option of thirty days in goal. His wife, who was also charged with a breach of the Medical Act, was discharged.

MEDICAL SOCIETY OF JAPAN.—In the report of the proceedings of a special meeting of the Sei I Kwai or Medical Society of Japan, held at Tokyo on November 30, 1887, *The Australasian Medical Gazette* says: The first business which occurred was the introduction by the President, Takaki-Kanchiro, F.R.C.S., Eng., of Miss Light, M.D., a recently-elected member of the Society practicing in Tokyo. This election shows a liberal and enlightened spirit we cannot too highly eulogise. Many of our readers may not be aware of the prominent position which is taken by modern European medicine in Japan, we therefore think it not out of place to say that the leading practitioners, who are really numerous, possess diplomas of the highest character, which they ob-

tained after study in Europe, and the papers read at and the reports of the meeting of this society show how highly cultivated these gentlemen are, and how enthusiastically and thoroughly, medicine, surgery, and sanitation are practiced in Japan, which but thirty years since was a sealed country against all European knowledge. The action of the State in these matters is far in advance of that of the Australian Governments, and the reports of the medical department of the Japanese Imperial Navy are almost a lesson to the world.

AN OLD IDEA PATENTED.—Dr. Joel W. Smith, Charles City, Iowa, writes: "The Fanny Suture," said to be patented July 13, 1886, in England, France, Austria, etc., consists in the application of adhesive plaster, upon each side of a wound, (wherever skin sutures or adhesive straps have usually been made use of to bring the divided or weakened parts in close apposition, and so as to favor the healing process) with eyelets at the end or side of each plaster nearest the wound, and thus permitting the lacing of the two plasters together.

The writer can testify that it is a valuable substitute in many cases for long plaster strips or skin sutures, after having repeatedly made use of the same thing, and in the earlier years of professional life, beginning 1850. The patent, of course, could not be sustained, but it is well to have it widely advertised.

THE COLLEGE OF STATE MEDICINE was incorporated in London in 1887, and is presided over by Sir Joseph Fayrer. The course of lectures during the summer session will be given in rooms of the Chemical Society, Burlington House. Among the lecturers will be Professors Klein, Fleming, Fayrer, Brudenell Carter, Seely, and Sir Robert Rawlinson. The regular Professor of hygiene and public health is Dr. Wm. Robert Smith. The Public Health Laboratory connected with the College will be open throughout the session, which opened early in May.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 16, 1888, to June 22, 1888.

Col. T. A. McParlin, Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Dept. of Platte, June 20, 1888.

Major J. M. Brown, Surgeon, will take charge of the office and duties of the Medical Director, Dept. of the Platte, during temporary absence of Col. McParlin. S. O. 52, Dept. Platte, June 20, 1888.

First Lieut. Chas. M. Gandy, Asst. Surgeon, granted leave of absence for three months, to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

Capt. Wm. O. Owen, Jr., Asst. Surgeon, ordered to Ft. Leavenworth, Kan., for duty. S. O. 148, A. G. O., June 27, 1888.

Major A. A. Woodhull, Surgeon, granted leave of absence for three months, to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

First Lieut. J. D. Poindexter, Asst. Surgeon, granted leave of absence for one month. S. O. 55, Dept. of Dak., June 18, 1888.

Capt. Marshall W. Wood, Asst. Surgeon, ordered to Ft. Randall, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Wm. C. Shannon, Asst. Surgeon, ordered to Ft. Meade, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Geo. McCreery, Asst. Surgeon, ordered to Ft. Warren, Mass., for duty. S. O. 147, A. G. O., June 26, 1888. So much of par. 3, S. O. 142, A. G. O., June 20, 1888, as relates to Capt. Geo. H. Torney and Geo. McCreery, Asst. Surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 14, 1888.

No. 2.

ADDRESSES.

ADDRESS ON DIETETICS.

Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. A. WOOD, M.D.,
OF PITTSBURGH, PA.

The growing importance of and interest in dietetics would seem to be a sufficient justification for the action of the American Medical Association in appointing a committee to report on that subject at this session.

Through lack of acquaintance it was impossible to name a committee that would comprise all, or even a large number of, persons especially fitted for the work. The embarrassment from that cause has been made less through correspondence with many physicians in different sections of the country, with the result of securing the services of several who are willing to act, not to formulate an exhaustive report at this time, but to give aid and encouragement to a more complete organization by which the subject may be more systematically presented in the future. But, even with this gratifying success, your committee feels that very many able men are, through no discourtesy, not on its roll of membership. On account of these hindrances organization was impracticable, and we come before you as a preliminary committee with a preliminary report.

We respectfully recommend that the Association take such action at this session as shall insure a continuance of the work thus begun, either by the organization of a large special committee, or by the establishment of a Section on Dietetics.

Food and drink have ever held the highest place in human affairs. As populations increase and communities advance in culture, alimentation becomes more diversified, while tastes, habits and customs evolve an almost endless variety of foods, drinks, cooking, eating and drinking. In savage and pioneer life the chief concern is how to get food; with highly civilized people, but especially with Americans, who revel in plenty, it is not so much a question of how to get food as how to cook, and how and what to eat and drink, as well as what to avoid. With the savage it is feast or famine, with starvation as the chief men-

ace to vigor and life; with the civilized it is generally plenty, but with loss of vigor, or disease, or premature death as the frequent penalty. The early loss of the teeth, contracted jaws, dyspepsias and diseases of nutrition constitute the constant menace to the luxuriously fed American man or woman. Thinking Americans are beginning to realize their peril, and to carefully consider the questions how to cook, and how and what to eat and drink that shall secure the greatest degree of comfort, the highest vigor and the longest life. Thus from forced observation and experience was dietetics born, and, based as it is on the law of self-preservation, it is destined to live and grow into an intensely practical branch of knowledge.

From this start in necessity, in which empirical generalities constituted the chief stock in trade, have been rapidly evolved the principles of dietetics, now shorn of much of its empirical crudities, and, although still incomplete, it stands to-day in the very front ranks of medical art for accuracy, efficiency and importance.

Dietetics has joined hands with organic chemistry to solve the problem, What is the pabulum of physiological life, and what are its relative and component elements? From that department of scientific research we now know accurately the kinds and amounts of the several food elements that will maintain human life in vigor from the cradle to old age, and under all vicissitudes and conditions.

Dietetics has joined hands with physiology to more clearly elucidate the occult functions—digestion, assimilation and nutrition, the waste and repair of vegetable and animal tissues. Where once it was believed that digestion was a simple and single process, it is now known to be highly complex in its processes, and consisting of at least three kinds, differing in the manner of doing and the kind of work done. By this accurate knowledge we are enabled to so arrange the work that the best results may be had. We know that inharmonious action of the three kinds of digestion not only provokes disease of the digestive organs, but also supplies the economy with impoverished pabulum, unfitted to maintain normal nutrition, or with a rabble of vicious products that poison the system with gout, rheumatism, neurotic and skin affections, and other maladies until lately

never suspected of being connected with disordered digestion.

Dietetics has joined hands with the cook, and raised her from the scullery to the position of the artist of the noblest of all arts. The cook is rapidly learning that cleanliness is next to godliness, and that tidiness is the religion of housekeeping. Wives and mothers are learning, what should have been learned long ago, that pleasing the palate is sweeter than pleasing the eye or ear, that properly cooked food is the best health preserver, the best health restorer, and a powerful social and moral agent.

Dietetics has recently taken another step. It has joined the kitchen with the public schools. The maidens who are soon to be the mothers of this nation are learning therein that their loved ones at home will look more proudly on the kitchen than on the drawing-room, and that the urn simmering for tea on the domestic hearth makes sweeter music than the pianoforte. Dietetics is teaching that tidiness in the dining-room—the snow-white cloth, the smoking viands prepared by the loving hands of a dimpled, white-aproned wife, will keep the husband from the grogshop, or reclaim him if he ever went there, with a thousand-fold more power than all the temperance sermons ever preached.

Dietetics has taken the American by the hand, and is showing him how he may escape from the thralldom and disgrace of our National curse, dyspepsia. It has long been charged that dyspepsia is a prevalent malady in America. This charge has never been denied, as it never has been proved. It is time we were finding out the exact truth of the charge. The charge is probably true, and we must begin to look the truth square in the face. If we are a nation of dyspeptics—and probably we are—then consequences the most dreadful—no less than the extinguishment of our race, threaten us. The medical profession of this land, if actuated by no other motive than patriotism, should begin investigating the evil, its cause, and the definite and effective plan for its arrest. The people's attention must not only be called to the consequences of dyspepsia to the individual, but they must be aroused to the awful fact that, by the laws of heredity, the dyspepsias of one generation will crop out in the degeneration of the offspring; that neurotic diseases, tuberculosis, drunkenness, and crime itself, may, and that some of them will, entail themselves on the child as the legacy of a dyspeptic father or mother. Americans must be taught that no nation of dyspeptics can long survive as against the aggressive competition of robust nations.

Dietetics is taking the physician in hand and leading him into fresh and richer fields. The route of his retreat from the moss-grown domains of custom and prejudice is littered with lancets, and blisters, and antimonials and mercurials. It

is found to be easier and more profitable to lead a patient back to health by the food instead of the drug route. Not that drugs or lancets should or will be dispensed with as remedial agents in many conditions of disease, but that their employment is much less demanded than was formerly thought possible. Enlightened and experienced physicians are coming more and more to depend on dietetics and sanitation, and on drugs and lancets less. Dietetics not only reveals the wonderful resources of alimentation in pathological conditions, but it also, while narrowing the sphere of drugs, more clearly defines their mode of action, makes plainer their indication, and makes them more efficient. It may be confidently claimed that he who relies least on drugs has the greatest confidence in them. This seeming paradox is explained away when we remember how often drugs fail when given exclusively or promiscuously, and how common their success when conjoined with suitable regimen. Again, the proper supply of nutrients is the all-important object in nearly all cases of disease; in many cases alimentation is all that is required, while drugs may perturb; in other cases wherein drugs are indicated they are of secondary importance, to correct some incidental symptom. In a very few cases, simple in form and of transient duration, drugs alone are required. In this *rationale* of modern physic, medicines have become not only subsidiary, but also come to possess a specific relation, not to the disease *per se*, but to the disease symptoms. Thus, a drug may reduce pyrexia, a *disease symptom*, and is therefore a specific for that special condition, but its use ends there, as should its employment, while alimentation is the beginning, the middle, and the end—the *vis preservatrix* in the treatment of all diseases.

Medicines used in this way rarely disappoint and, what is nearly as good, they rarely do harm. The practitioner who thus employs them will have the greatest confidence in their ability to do the work required. Many families in this land, and their number is yearly increasing, are content to allow their physicians to treat their maladies by rest and dieting, to the more or less exclusion of drugs, from having experienced the gratifying success of such a mode of treatment. As drugs drove the lancet from the field, so will rational dietetics restore bleeding to its legitimate place, and limit the usurpation of medicines, and both will be the servants, not the masters, of alimentation and nutrition.

Perhaps in no other class of maladies is the reliance on alimentation so apparently remedial as in the malnutrition and diseases of infancy and childhood. The mortality of children under 1 year of age is frightful and criminal; frightful from the large proportion of deaths, and criminal because nine-tenths are from preventable causes. It is believed that a large majority of the cases of

sickness among children, especially during the summer months in cities, are caused by overheating, bad ventilation, improper food and faulty feeding, and the prevalent opinion is probably correct. But in the multiplicity of causes precision is impossible. All these causes play parts in the terrible drama, but too little is known of the exact influence of each cause separately considered. Of them all it is almost certain that improper food and overfeeding, especially in cities during the hot weather, are the two which preponderate.

There are two classes of people that need looking after: the first is the vendor of unwholesome milk. This class must be taken in charge by the strong arm of the law. Milk kept in foul vessels, watered milk, adulterated milk, and milk from wretched cows chained up all their miserable lives in dark stables and fed on brewery slops, slay annually thousands and thousands of helpless babes in our cities. Such milk is unfit for any purpose, and it should be kept out of the market. Those who vend such milk are deliberate murderers, and they should meet with the punishment commensurate with their cowardly crime. The other class consists of the mothers and nurses, who will persist in overfeeding babes, dreading starvation, ignoring the fact that babes need water, not milk, when fretful and feverish from indigestion. The crime of this class is ignorance, and they must be educated out of their pernicious practice. Thousands of children may be saved by lessening the amount of food during the heated term.

The questions, What is the best substitute for human milk, and what is the best food for weakly and invalid children? although more frequently asked than formerly, still remain *sub judice*, or at least the solution of the questions is not generally accepted in practice. Accurate knowledge in regard to them must be given by some authoritative body.

Cow's milk, sometimes slightly modified, seems to be the most rational and favored as the substitute for the mother's milk. This generally accepted belief is based partly on experience, and partly on the physiological precept that there can be no digestion of starch foods prior to dentition. But experience and precept are sometimes both upset in cases of infants who do not digest milk but who do digest modified starch foods. In the absence of precise knowledge on the subject of infant foods and feeding, we go on treating infantile maladies with an empiricism redeemed only by the common sense and experience of the individual practitioner. The aggregated and formulated experience of the whole profession is wanting, while tradition, united with straggling experience, serves as a fickle indicator rather than a reliable guide in the dietetics of infancy and childhood.

Among the besetting evils of Americans are rush, overwork, great plenty and variety of food, great food waste, bad cooking and badly cooked

food, hurried eating, foul water supply to cities, and dram-drinking. Any one of these evils tends to the impairment of health, and all of them aggregated are sure to result in the deterioration of the race. The duties of the medical profession have so widened that it is become to a large extent the custodian of public health. The world cannot produce such a field of useful, necessary work as lies before the profession in America—the work of arresting the decay of the American race. Can this Association, whose grand function it is to crystallize medical thought and direct medical art in this country, longer refuse to lend its authority to warn our people of the danger ahead, and to direct its powerful organization against the evils which, if not arrested, will result in disaster to our people and our Nation?

When the first submarine cable was laid a scientist predicted that some deep sea animal would turn up to eat the covering of the cable. The prediction was verified. Dietetics already has its parasites. To hear these barnacles prate of foods, and peptones, and artificial digestors, one is led to believe that dyspepsia will soon be numbered with the lost tribe. Their advertisements are to be found in many respectable journals. The wares they offer are generally a discredit to the few physicians who have, perhaps thoughtlessly, praised them, and the whole business—wares, journals, and praising doctors—brings discredit on dietetics. On this subject the American Medical Association must exercise its authority in the most positive manner. Not only is the public wronged by the avalanche of "food" products on the market, but the busy and honest practitioner, who has no time to investigate, nor has he authority on the subject, is at the mercy of these vendors of "physiological foods," "chemical foods," "invalid foods," *ad nauseum*, that flood our drug-stores. What is wanted is thorough investigation of these often worthless compounds before a tribunal of competent men who can voice the truth with that authority which will command attention and confidence.

Is there danger of going to extremes in dietetics? Is it possible to attach too much importance to digestion and nutrition? Yes; a few people will ride nothing but a hobby-horse. But dietetics will not be carried to extremes; it will, however, have many radical disciples. From Hippocrates down there has been a constant conflict between ultraism and conservatism in medicine, and the strife will continue until medical science ceases to progress, and until the art is exact. If the conservatives have fought more stubbornly, the radicals have won more victories. The disciples of Jenner won a brilliant success over their jeering opponents; the ultra bacteriologists are likely to defeat the conservatives; Listerism is more reliable than former methods, and Lister is an extremist.

Dieticians will incline to ultraism, but the principles of dietetics cover too much ground to ever assume specialty, or build up an esoteric class of practitioners. Dietetics is too broad for the specialist. Ultraism is not always an evil nor its practice a sin. All great medical pioneers have been regarded as extremists in their day. The ultraism of a generation ago is the conservatism of to-day.

And what is the ultraism of dietetics? Briefly, that digestion and nutrition constitute the all in all of animal life: that many forms of disease, as gout, rheumatism, Bright's disease, many neuroses, skin diseases, and other affections, are but manifestations of faulty digestion or malnutrition; that maladies belonging to the above class can only be successfully treated by judicious alimentation, while drugs hold a very subordinate place in their cure. This kind of ultraism will grow and deserves to grow. Many advanced thinkers believe that phthisis pulmonalis cannot exist without antecedent indigestion, followed by faulty nutrition; that the lung lesion often begins as dyspepsia, and that no case of consumption was ever cured except by restoring digestion and nutrition, and that the more complete their restoration the more thorough the cure of the lung disease. With all the investigations, lasting through centuries, seeking for a drug to cure consumption, and with all the various claims that have been made for medicines which held the boards for longer or shorter periods as specifics in consumption, not one of them remains to-day as a remedy for that affection, and, although ignorant faith may cling to some of the medical myths of the past, not an enlightened physician in this land but what selects his remedies more to restore digestion and nutrition than for any direct effect they may have on the disease of the lungs.

There is one abuse which has crept into modern practice under the seeming sanction of dietetics, and which calls for loud protest. Allusion is had to what may be termed *vicarious digestion*. This term applies to all methods by which the digestive organs are relieved of all or a part of their work, and includes the employment of all bland and easily digested foods, malted foods, predigested foods, and food per rectum. This practice, so efficient and necessary in acute stages of disease, and in all conditions where there is suspension of digestion, is pernicious when, as it often is, too long continued, or employed in cases where the digestive act is even moderately well performed. The pabulum supplied by vicarious digestion is not, it cannot be, endowed with that robust vitality belonging to the product of normal digestion, and hence can supply only a low grade of nutrition, sufficient it is true to bridge the system over a short interval of interrupted digestion, but lacking the vigor to sustain a strong and active state of health. Again, if vicarious digestion is too

long continued, or employed unnecessarily, paupers are made of the digestive organs. Our teeth are going because there is no longer need of that vigorous mastication peculiar to an age of crude cookery, and, if we persist in carrying vicarious digestion to the extent threatened, the stomach will lose its function and waste away toward the state of a rudimentary organ. The only way to keep the stomach strong is to force it to perform its legitimate work:

Vicarious digestion may become a habit if indulged in for too long a time; the papoid habit may become as enslaving and as destructive as the opium habit. The tissues will starve on cells that enter over the wall instead of by the appointed portals of vital action. Such nutrition does not stay, the puny cells have not received the stamp of genuineness and every emunctory is up in arms to turn the rascals out,

Food and drinks, feeding and drinking, would seem to exert a wonderful influence over the habits of thought, the customs and manners of races of men, and their diseases also. By searching we might find that the egotism, conservatism and tenaciousness of the Englishman are as much the results of his beef and ale as is his gout; that the sparkling *bonhomie* of the Frenchman comes from his dainty *cuisine* and bubbling champagne, as does also his mercurial disposition and his passionate life; that the maccaroni and fortified wines bestow song and art on the Italian, as does beer and *sauc kraut* stamp solidity and patriotism on the German. America, ever able to give the world a lesson, contributes rush and dyspepsia as the product of hog and whisky.

CONSIDERATIONS ON THE ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE CÆCUM AND APPENDIX.

*Read in the Section on Surgery, at the Thirty-ninth Annual Meeting
of the American Medical Association, May, 1883.*

BY JOSEPH RANSOHOFF, M.D., F.R.C.S.,
OF CINCINNATI.

Having been requested to present a paper on this very comprehensive subject, I believe to be best enabled to meet the requirements expected by considering the subject in its anatomical, physiological and pathological aspects, since here as elsewhere, a knowledge of the first of these is a pre-requisite to the understanding of vital processes, normal and abnormal. To enter into anatomical details requires no apology here, since this is the Section of Anatomy as well as that of Surgery.

Anatomy.—Strange as it may appear, the topography of the cæcum, the vermiform appendix, and the ileum is greatly misapprehended, not only by the profession as a body, but by most

1888.]

anatomical writers. All agree that the cæcum, or caput coli, is a blind pouch about three inches in diameter, two and a half inches in length, and the widest part of the large intestine. In the relations of the cæcum to its serous coat, writers again agree with almost unanimity that "the cæcum is covered by peritoneum as a rule, in front and on the sides, and that the posterior surface is connected to the iliac fascia by loose connective tissue." Little as this description accords with the real it has become, as Mr. Treves has said, an "anatomical property," to be handed down from generation to generation, and to be utilized from time to time by writers on perityphlitis, though they be as observant as Oppolzer¹, Bartholow², Eichhorst³, or Pepper.⁴

In reality, the cæcum is with rare exceptions, completely surrounded by peritoneum from the ileo-cæcal valve to its apex. Bardeleben⁵ came to this conclusion as long ago as 1849, from the examination of 160 bodies. Twelve years later Luschka⁶ again insisted on the serous investment of the cæcum. Hyrtl⁷ followed in the same path, and in the examination of 100 bodies Treves⁸ never found the posterior surface of the cæcum uncovered by peritoneum or attached to the iliac fascia by areolar tissue. In two out of sixty-three bodies, both adults, which I examined in regard to this, I found the cæcum invested only in front and laterally. This peritoneal investiture applies not only to the cæcum, but often as well to the lower inch or two of the ascending colon. Special examination with reference to this point in hospital, mortuary and dissecting room has convinced me that the recto-cæcal inflammation or perityphlitis of Oppolzer, and the perforations of cæcum or appendix without involvement of the peritoneum are alike physical impossibilities in the vast majority of cases. What shall then be said of the suggestion and practice of Bugge⁹ to attack perityphlitic abscesses from the loin to avoid injuring the cæcum, or of the enthusiastic advocacy of Burchard¹⁰ of lumbar typhlotomy in acute perforating typhlitis.

From the posterior internal aspect of the cæcum, as a rule, from half an inch to an inch from its base, springs the appendix. This lateral position is altogether the result of unequal development; early in embryonic life the appendix and the cæcum form one continuous pouch. Towards the fifth or sixth week the cæcum appears at the side of the rudimentary intestinal loop, in the form of a short and broad dilatation. While it grows in length, its width does not continue uniform, it being widest at the base where it joins the colon and narrow below. The differentiation between the upper third and lower two thirds of the cæcum

does not commence till the tenth week, and as it progresses the former rapidly widens, while the latter does not greatly increase in calibre. The appearance is thereby presented of a long narrow tube hanging from and continuous with the apex of the projection from the intestinal loop; cæcum and appendix are thus formed.

They are continuous with each other in the axis of the former, and in the first-half of embryonic life are cylindrical like the small intestine. It is only in the sixth or seventh month that three ampullæ or sacculiform in the cæcum form the development of the longitudinal muscular fibres in bands or tæniæ. Three in number, they descend from the colon, and meet at the apex of the cæcum, that is at the root of the appendix; one lies on the side of the bowel into which the ileum enters, a second is placed on the posterior-external aspect of the colon and cæcum, whilst the third and most distinct runs along the anterior aspect of the gut. By the equidistant disposition of these bands in the foetal cæcum it is divided into three fairly equal parts. This foetal or conical type of cæcum may continue throughout life. Treves found it twice in 100 examinations. In a second type of cæcum the apex appears imbedded between two sacculæ, whereby the conical appearance is substituted by a more quadrilateral shape. This appearance Treves¹¹ found in only three subjects. "What usually occurs is that the part of the cæcum to the right of the anterior band grows quite out of proportion to that on the left. Moreover the anterior wall of the cæcum becomes more developed than the posterior. As a result the true apex of the cæcum is turned more and more to the left, until at last it is placed in close proximity to the ileo-cæcal junction, and can only be recognized by noting the point of origin of the appendix. The highly developed part to the right of the anterior band becomes so dependent and prominent that it forms a new or false apex to the cæcum, and it is to this projection that the anatomical term apex is usually applied."

The vermiform appendix is not so much a wanderer as is often represented; when examined it maintains pretty constant relation to the cæcum, the ileum and mesentery. In the majority of examinations made by me, the process was hidden from view behind the cæcum, and could be studied *in situ* only by drawing the cæcum aside. Resting for an inch or more of its course behind the latter it generally continues upwards behind the ileum and beneath the lower surface of the mesentery. In its upward course the appendix inclines to the left so that, as a rule, its tip points towards the spleen. In a much smaller proportion of cases the process lies perpendicu-

¹ Allgem. Wien. Ztg., 1855, xx and xxxi.

² Americ. Journ. Med. Sc., viii, p. 354.

³ Real Encyclop. Art. Typhlitis.

⁴ Trans. Med. Soc. Penn., 1835, p. 227.

⁵ Virchow's Arch., Bd., ii, p. 554.

⁶ Virchow's Arch., Bd., xxi, p. 284.

⁷ Topog. Anat.

⁸ Intest. Canal in Man, Lond., 1855, p. 40.

⁹ Centralbl. f. Chir., 1881, p. 172.

¹⁰ New York Journal of Med., 1881.

¹¹ Treves, loc. cit., p. 35.

larly behind the cæcum, whereas it is exceedingly uncommon to find it dangling over the pelvic brim after the manner illustrated, even in our best standard anatomical works. In only seven of the examinations made by me did I find the appendix in part a pelvic organ.

The average length of the appendix is 4 inches, and its diameter is that of a goose-quill. Unless much below average length the appendix is never straight in its course. It always presents a spiral curve, the concavity of which looks to the right and upwards. In its width the appendix is subject to few variations except as a result of disease. Regarding its length the reverse obtains. In children it is relatively longer than in adults. Complete absence of the appendix was noted by Bartholin and Morgagni. Gerlach found it as large as a pea. On the other hand, Treves and Fitz found the appendix 6 inches long. In a specimen in my possession, that of a large adult, it is $7\frac{1}{2}$ inches long. In the museum of the Pennsylvania Hospital is an appendix 9 inches long. As described by Wistar,¹² it lay behind the colon and reached the under surface of the liver. Other peculiarities of the appendix in respect to position and mobility are often encountered; being for the most part the result of abnormal processes, they can more appropriately be considered under the pathology of this region.

When the normal appendix is drawn from its niche behind the cæcum and ileum, it will always be found completely surrounded by peritoneum and having a distinct mesentery by which it is attached to the under layer of the mesentery of the ileum. This appendicular mesentery or mesenteriolum, as it is technically called, springs at right angles from the lower surface of the mesentery, extends without to the ileo-cæcal junction, while within it forms a free and concave margin. In the foetus it extends quite to the tip of the appendix, while in the adult the distal half-inch or more is free of mesenteric attachment and therefore movable. Haschke,¹³ Alby,¹⁴ Little¹⁵ and Treves¹⁶ refer to a second duplicature of peritoneum which is always demonstrable by traction on the appendix and is quite distinct from the mesenteriolum proper. It is smaller and anterior to the larger fold. It arises from the last inch or two of that border of the ileum which is most remote from the mesenteric attachment, passes over the inferior attachment of the ileo-cæcal junction, is attached to the cæcum and joins the mesenteriolum near the line of its insertion to the appendix. Like the mesenteriolum, this duplicature has a free and concave margin looking to the left. Between this fold and the mesentery of the appendix there exists the de-

pression, large enough to admit a finger, first accurately described and called by Luschka¹⁷ the ileo-cæcal fossa.

Complicated as the peritoneal investment of the appendix may appear, a knowledge thereof has a practical bearing. Since it is nowhere attached to the abdominal wall or to fasciæ covering the latter, and since, like the cæcum, it is everywhere covered by peritoneum, and since the serous walls bounding the ileo-cæcal fossa are in close relation with the appendix, the fatality of perforations of this part is greatly diminished by the natural tendency of inflamed serous surfaces to adhere and to limit an abscess which may develop. For the same anatomical reasons every perforation of the appendix must involve the peritoneum.

The usual seat of the cæcum and appendix is in the psoas muscle, the apex of the former pointing towards the inner half of Poupart's ligament. It is only in exceptional cases or where the cæcum is greatly distended that it extends outward and is in contact with the iliac muscle. Even in such an event a double serous layer intervenes between them. In almost all subjects the ileum extends over the inner border of the psoas, and its termination is loosely fixed to the pelvic brim by a double peritoneal fold. Great length of this and of the muscular wall will in certain cases permit cæcum and appendix a greater scope of movement than they generally possess. Under such conditions they may be found in the pelvis, even to the left of the median line. This anomalous position of the cæcum is of sufficiently frequent occurrence (18 times in 100) to account for its occasional appearance in inguinal and femoral herniæ and the opening of perityphlitic abscesses into rectum, vagina or bladder.

While, as already indicated, every extension of a cæcal or appendicular inflammatory process must involve the peritoneum, and if an abscess form this must be primarily intraperitoneal, the contiguity of the cæcum to the psoas and eventually to the iliac fascia, has an important bearing on the subsequent course of abscesses of this region. It will readily explain the peculiar decubitus of many cases of perityphlitis; the fixed position of the limb, the pains radiating towards the thigh and the genitalia, and the possibility, as Gibney¹⁸ has shown, of mistaking protracted cases for hip disease. In the cæcum and appendix radicles of the portal vein are found, accounting for the possibility of pyelo-phlebitis as a sequela of pericæcal inflammation. On the other hand, thrombosis of the iliac vein is of far less frequent occurrence than the anatomical relations of the cæcum would lead one to expect. Bamberger¹⁹ was the first to call attention to this compli-

¹² Quoted by Fitz, *Am. Jour. Med. Sci.*, vol. xcii p 32 and *JOUR. AM. MED. ASSOCIATION*, Jan. 21, 1907.

¹³ *Auſg. Splanchnologie.*

¹⁴ *Bau des Mensch. Körpers.*

¹⁵ *Dublin Quart. Jour.*, vol. lii p 112.

¹⁶ *Loc. cit.*, p. 47.

¹⁷ *Virchow. Arch. f. Path. Anat.*, Bd. 21, p. 227.

¹⁸ *Am. Jour. Med. Sci.*, vol. lxxxii.

¹⁹ *Krankheiten des chylopoietisch. Systems*, p. 332.

cation, of which I. Wickham Legg²⁰ has quite recently reported a very interesting case that ended in recovery.

The anatomical relations of cæcum and appendix alone suffice to explain certain clinical differences between inflammatory conditions of the one or other part. The cæcum being comparatively superficial in position, its peritoneal coat continuous with that of the iliac fossa and anterior abdominal wall, an abscess about it would speedily manifest itself by the presence of a tumor. The appendix, on the other hand, being deeply seated behind the cæcum, and below the mesentery of the ileum, abscesses about it may continue for a considerable length of time without the appearance of a tumor in the right iliac fossa. The fixed position of the ileo-cæcal junction and the mesentery would often direct the progress of such an abscess towards the pelvis. Hence the great importance of rectal exploration in cases of suspected inflammation of the appendix, as a diagnostic measure; a factor to which Fenwick²¹ and Pepper²² have recently directed especial attention.

The position of the appendix may also account for another clinical feature of not a few cases of appendicitis, and that is the marked symptoms of intestinal obstruction. The thickened appendix, possibly embedded in an abscess, compresses the ileum from below and behind until obstruction in reality occurs. In 1876 Duplay²³ was enabled to collect twelve cases in which perforative appendicitis produced all the manifestations of internal strangulation.

Physiology.—If the cæcum and appendix have a function, it can only be inferred from comparative studies. It is well known that in the herbivora the cæcum plays the rôle of second stomach, forming, not an insignificant dilatation of the colon, but a vast reservoir communicating with the small and large intestines by narrow orifices. Its volume then occupies the larger part of the abdominal cavity, and its capacity may be twice as great as that of the stomach. Under such circumstances the cæcum approaches the small intestine very closely in structure. In the hare, for example, it possesses valvulæ conniventes, Peyerian patches, etc. A constricted terminal portion of the cæcum in this animal presents, in appearance at least, an analogue of the vermiform process as seen in man and the higher apes. In the carnivora, on the other hand, the cæcum is rudimentary. Whether well-developed or vestigiary, the cæcum undergoes modifications, both as to size and form, according to the kind of nutriment.

In man, the chief function of the cæcum is absorption, as evidenced by its wealth of solitary follicles and the presence of a group of five or six lymphatic glands which are always found in the

mesentery near the ileo-cæcal junction. By way of digression, it may be observed that secondary suppuration in these glands may occasionally explain the non-communication of perityphlitic abscess with the bowel. It is in the dependent pouch of the cæcum that gravity tends to retain the excrement for some length of time, until absorption changes its character from that found in the small intestine. It is in this most stagnant part of the alimentary canal, therefore, that fecal impaction or the lodgement of foreign bodies would most frequently take place. In the appendix, Lieberkühn's glands and solitary follicles exist in such profusion that facilities for absorption are even greater than in the cæcum. Hence the contents of the appendix are always of firmer consistence than those of the cæcum.

I have so often found the appendix occupied by a narrow column of rather firm matter, that I have been impressed with the idea that, in reëntering the cæcum, it may possibly act as a nucleus for the farther deposit of excrement, thus being the incentive to the moulding process which is perfected, of course, in the haustra of the colon.

In 1847 Gerlach²⁴ called attention to a valve at the orifice of the appendix which had already been described a hundred years before by Weitbrecht and Schrader.²⁵ It is best developed between the ages of 3 and 12, but even in adults is said never to be absent. In fresh specimens I could not demonstrate the valve, although its presence was inferred from the difficulty with which injections into the colon and cæcum would enter the appendix. More important to me than the valve appears the arrangement of the mucous membrane of the cæcum in pretty constant folds. Unless the parts are thickened by disease, the mucosa of the postero-internal part of the cæcum is arranged in rather low concentric folds around the orifice of the appendix. With distension of the cæcum they disappear. The appendicular orifice appears in the centre of these folds as in a vortex, towards which there would be a natural though sluggish current of whatever came in contact with the inner wall of the cæcum. It is only in this way that we can account for the presence in the appendix of elongated bodies like a pin, a bristle from a tooth-brush or a nail, when its orifice is hardly large enough to admit the pit of a cherry.

A probable function of the appendix is the secretion of mucus, of which a very considerable quantity is usually incorporated with the excrement. When the appendix of the rabbit is opened there exudes a thick gummy secretion differing entirely from that of the cæcum. When the appendix of man is patulous it contains also a thick glairy mucus, like that which can at all times

²⁰ St. Bartholomew's Hosp. Rep., vol. xvi, p. 259.

²¹ Brit. Med. Jour., 1884, vol. ii, p. 952 et seq.

²² Jour. Amer. Med. Association, January 21, 1888.

²³ Arch. gén. de Méd., 1876, vol. xxviii, p. 513.

²⁴ Zeitsch. f. Ration. Med., Bd. vi, p. 12.

²⁵ Hyrtl, loc. cit., i, p. 806.

be squeezed from the crypts of the tonsils. Like the tonsil, the appendix is a lubricator. Its function is not of a high order, as is evidenced by the fact that its absence or conversion into a fibrous cord can never be recognized *intra vitam*. It may therefore be concluded that, when well developed, the appendix has a function subordinate to that of the cæcum. The history of its development and its occasional absence stamp it, however, as a vestigiary part of the alimentary canal.

Pathology.—When Dupuytren,²⁶ in 1826, had first called attention to the relation of pericæcal abscesses to those of the right iliac fossa, observations in this field were rapidly instituted by continental writers. In 1830 Goldbeck²⁷, of Heidelberg, first suggested the term perityphlitis for all the inflammatory conditions of this region. In 1834 a step was taken in the right direction when Copeland²⁸ first differentiated lesions of the cæcum from those of the appendix, and another by Albers,²⁹ who first described that special form since known as "typhlitis stercoralis." In 1836 and 1838 John Burne³⁰ contributed, in two excellent articles, further knowledge concerning lesions of the cæcum and appendix. Within recent years, particularly, numerous articles on the diseases of this region have appeared and as a result their proper nomenclature is being gradually determined.

There are most excellent reasons, anatomical and clinical, for separating inflammations here present into those of the cæcum and those of the appendix; each to be subdivided into those of the part itself and those of the peritoneal investment. There is, it appears, a rational basis for the use of the terms, typhlitis to indicate inflammation of the cæcum, perityphlitis to indicate a like condition of its serous coat. Appendicitis, following in the path of With³¹ and Fitz³² should be reserved for inflammation of the appendix, and peri-appendicitis, or appendicular peritonitis for that of its peritoneum.

Of the varieties of cæcal and appendicular inflammation, those of the appendix are of far more frequent occurrence in grave cases than those of the cæcum proper. Yet it is equally certain that typhlitis is far from uncommon, although mortuary records would fail to show it. In the investigations of the anatomy of this part I was struck by the frequency with which evidences of chronic catarrh, in the form of patches of indolent venous congestion, pigment spots and superficial abrasions were encountered in the cæcum. In all such instances the scybalous contents were covered with a layer of opaque mucus. This catarrhal condition is by no means confined to those who are habitually constipated, but is often encoun-

tered in the young, in whom the dependent position of the cæcum makes it a favorite seat for the retention of indigestible food. From this condition there is only a step, though a long one, to the typhlitis stercoralis of German writers, which, though doubtless of frequent occurrence generally ends in recovery and is therefore not often anatomically demonstrable.

Given, however, a continuance of the cause, which, in contradistinction to that of peri-appendicitis, is rarely a foreign body and the erosion becomes an ulcer. If the pressure effect of a hard, fecal mass be the cause, the ulcer would probably be seated in the posterior wall of the cæcum, where, therefore, the localized peritonitis or intraperitoneal abscess would be most likely to result. That such peritonitis may develop in any portion of the cæcal superficies is shown by the multiplicity of directions taken by perityphlitic abscesses in different cases. Whether the abscess presents itself above or below Poupart's ligament the superficial position of the cæcum generally causes it to appear early. The only exception hereto is that in which the pus travels towards the loins, under which circumstances the pericæcal trouble is probably secondary to a perirenal, spinal or iliac abscess.

The perforations which occur in the cæcum are not often produced by foreign bodies although a number of such cases have been recorded. They are not infrequently produced by tuberculosis, although here, as in the case of foreign bodies, the appendix is preferably the part affected. The ulceration may however exist in the cæcum alone, the appendix remaining unaffected. I beg to present a specimen of this kind.

It is evident that the views entertained from time to time concerning the relative importance, pathologically, of the cæcum and the appendix have vibrated like a pendulum. Dupuytren and his followers looked on the cæcum as the part primarily at fault. Burne located in the same part, and Habershon³³ followed in the same direction. In the more recent contributions of Kraussold³⁴ and Biermer the appendix has been given greater prominence than ever before. Whereas, formerly, as Kraussold puts it, the appendix was treated in a stepmotherly way, there is danger now that the cæcum will share this fate. While in the acuter and more fatal forms of perforative inflammation of this region the appendix doubtless plays the more important rôle, of 25 cases recently collected by me only one³⁵ being of the cæcum, it is unreasonable to ascribe every perforation to it from clinical evidence alone. Thus so admirable an observer as Fenwick³⁶ mentions a case in which an abscess of the thigh was opened and discharged

²⁶ *Tumeurs Orales*, v. iii. p. 12.

²⁷ *Ueber eigenthümliche Ent-Geschwulste d. recht. Hüftgegend*.

²⁸ *Dictionary*, vol. i. p. 277, quoted by Fitz.

²⁹ *Beobacht. im Gebiete d. Pathologie*.

³⁰ *Medico-Chirurg. Trans.*, vol. xx. p. 201 and vol. xxii. p. 33.

³¹ *London Med. Rec.*, 1850, 1, p. 213, quoted.

³² *Amer. Jour. Med. Sc.*, vol. 62, p. 321.

³³ *Guy's Hospital Reports*, vol. xi.

³⁴ *Volkmann's Samml. Klin. Vorträge*, 191.

³⁵ Case of J. J. Reed, *Med. Record*, 1886, 1, p. 461.

³⁶ *Loc. cit.*

æces. In another instance an abscess terminated in a chronic vaginal fistula. Since both cases recovered what evidence is there that in either the appendix was primarily at fault. Fenwick, with others, rightly claims that the occlusion of the orifice of the appendix is a common cause of perforation. How can we logically, in such a case, account for the continuance of a copiously discharging fæcal fistula. It appears to me much more probable that cases of this nature are primarily of cæcal origin.

On the other hand the position of the appendix, the narrowness and tortuousness of its canal, the presence of a valve, the tendency of fæcal or foreign matter to be retained in it and the readiness with which it is displaced, all serve to make the appendix the principal seat of grave pericæcal inflammation. It is not remarkable therefore that autopsies will often reveal pathological conditions of the appendix where death has resulted from other causes. Züngel, Toft and Kraussold have called particular attention to this fact. The latter writer even claims that between the age of 20 and 70 every third body will show traces of disease of the appendix, and that particularly in tubercular subjects it is often converted into a tubercular ulcer. In over sixty examinations recently made I found reasons for believing that in this section of the country, at least, the proportions quoted are entirely too large. In only eight were there either abnormal adhesions, unusually hard fæcal masses, fibrous occlusion, or cicatrices on the surface. In only one instance was a foreign body (the stem of a raisin) encountered. The discrepancy between these observations and those of the authors alluded to may be accounted for by the greater indulgence in animal diet by our people. Speck² calls attention to the greater frequency of the diseases of this region, in Siberia, where the food, which is mostly vegetable, contains a large amount of indigestible residue.

The history of appendicitis is for the most part like that of inflammations in other narrow mucous canals with their catarrhal, ulcerative and cicatricial phases. Recurring like typhilitis and usually occurring like it about the period of adolescence, appendicitis is doubtless in many cases but the extension of disease from the cæcum. The catarrhal thickening of Gerlach's³ valve or permanent stenosis of the appendicular orifice may cause the retention of excrement or mucus, either of which may form the nucleus of a concrement. This or a foreign body has been shown by Matterstock⁴, Fenwick and Fitz to be the cause of perforation in three-fifths of all cases. In other instances the appendix degenerates into a retention-cyst. Whatever the condition of the appendix if at all grave, the peritoneum is sooner or

later implicated. The favorable position of the appendix for forming adhesions and localizing abscesses without doubt often prevents a general peritonitis. On the other hand the rupture of such adhesions or residuary abscesses may fatally infect the general peritoneum. Not infrequently, where there is no foreign body, the appendix degenerates into a firm fibrous cord, buried in adhesions and often difficult to find. These are the cases in which the progress of the appendicitis is made manifest from time to time by clinical phenomena, and in which the appendix, as the seat of recurring disease and a constant threat to the individual, may, as was recently done, be justifiably excised.

In a very fair proportion of cases (seven out of twenty-five), no foreign body or fæcal mass is found, nor can the rupture of a cyst or tubercular ulceration account for the perforation peritonitis. In such instances the distal inch or two of the appendix is often found gangrenous, either adherent to the appendicular base or as a slough-free in a pelvic abscess. This condition, it appears to me, is brought about by the displacement of the appendix and consequent torsion of its vessels. Since the distal half inch or inch has no blood supply independent of the base, torsion of the latter would primarily involve the tip. A number of facts support this view. In the first instance, the appendix is not a pelvic organ under ordinary conditions. In perforative appendicitis of rapid development the abscess is at least often intrapelvic. In the second place the exciting cause of perforating appendicitis is in one-fifth of the cases a violence, such as might result from blows on the abdomen, excessive exercise, lifting or vomiting. In the third place the gangrene is usually developed beyond the point of perforation. The latter is usually within one or two inches of the cæcal end, the gangrene, however, involves the tip.

The subsequent pathological history of perforative appendicitis is outlined by the rapidity of the effusion and the facility or want of facility with which adhesions are formed. In many instances the contents of the appendix are thrown into the general peritoneal cavity, and death ensues with the rapidity and certainty pertaining to intestinal ruptures from other causes, and before adhesions form. In many cases, however, gradual drainage prepares the way for a limitation of the resulting abscess between mesentery and mesenterium, small intestine within and cæcum without, omentum in front and behind all, the reflections of the peritoneum over the psoas and eventually over the iliac fascia. Is it not possible, therefore, that except in foudroyante cases, the danger of general peritonitis is somewhat over-estimated?

When an abscess forms, what more probable than its more or less rapid course towards the surface, above or below Poupart's ligament, towards

² Quoted by Whittaker. *Pepper's Syst. of Med.*, vol. ii, p. 516.

³ Gerh. *Handb. der Kinderkr.*

⁴ Treves, *Brit. Med. J.*

the hypogastrium? Or that in other instances burrowing through the iliac fascia—it should tend towards the loin; or opening into some hollow viscus like the cæcum, rectum or vagina eventually be recovered from?

It is beyond the scope of the task assigned me to dwell on the diagnosis and treatment of the conditions considered. When and how to deal with them will be discussed by those of my colleagues more competent and experienced. Were I, in conclusion, permitted a few aphorisms they would be: "Place not your faith in exploratory punctures; operate early and by lateral laparotomy when the symptoms are of the gravest and a tumor is not forthcoming; reserving the incision parallel to Poupart's ligament for abscesses that are palpable."

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECTS.

Read in the Section on Anatomy and Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May, 1888.

BY CHARLES BINGHAM PENROSE, M.D.,
OF PHILADELPHIA.

Surgical operations are necessary in intestinal obstruction for two purposes—for diagnosis and for treatment. The great mortality of intestinal obstruction shows the inefficiency of the methods of treatment now generally used. For intestinal obstruction is not a disease which is necessarily fatal. It is a mere occlusion of the alimentary tract which, theoretically at least, is always capable of some form of relief. A person may occasionally die of the disease that produces the obstruction, but the obstruction itself is always amenable to treatment.

The mortality of all kinds of acute obstruction is nearly 100 per cent. when treated by medicinal means alone. And according to Fockwell's table, published in the *Annals of Surgery*, for February, 1888, the mortality in all cases of intestinal obstruction which were submitted to operation between the years 1877 and 1887 was 46 per cent. This almost certainty of death when medicinal treatment alone is used is due to the fact that attempts are made to overcome by drugs a mechanical difficulty of such a nature that it can only be overcome by mechanical means. And the great mortality after surgical treatment is due to the fact that operation is deferred too long; delay in operating being caused, in many cases, by an uncertainty of diagnosis; in others, because the symptoms have been masked by opium, in others on account of a misplaced confidence in the value of a preliminary treatment by drugs, and the "trust to luck" procedures like massage, rectal injections, puncture by a trocar, etc. This delay, this preparatory treatment of the patient, is the reason that laparotomy for intestinal obstruc-

tion is so very much more fatal than laparotomy for any other cause. The average length of life in cases of acute obstruction is five or six days, and during this time the diagnosis must be made and a definite plan of treatment instituted. As, therefore, an early diagnosis is of such great importance, I would urge the free use of an exploratory laparotomy as a means of diagnosis in all doubtful cases; and in those most delusive cases of chronic intestinal obstruction with a past history of acute attacks. For it is in such cases that there is the greatest tendency to pursue the same expectant plan of treatment which may previously have been successful. An exploratory laparotomy performed in such cases at the very beginning of an acute attack is accompanied by but little danger and, by revealing the exact nature of the disease, it gives warning of how long it will be safe to allow the case to run on without operative relief.

In the *Lancet* for October 29, 1887, Mr. Treves reports two successful cases where exploratory laparotomy was performed for chronic obstruction. In one case an artificial anus was immediately made from the cæcum, and in the other the abdominal wound was closed and eight days later a lumbar colotomy was performed.

In discussing the surgical treatment of intestinal obstruction, I shall consider the general procedures which may be necessary for relief and treatment, without considering separately the individual forms of the disease or the details of the special surgical operations.

When laparotomy is performed for acute obstruction there is no time for much preliminary preparation of the patient. It may be necessary as a preparatory step to relieve abdominal distension; for great distension has caused sudden death by pressure upon the diaphragm and interference with the action of the thoracic organs; and the patient has, in several instances, died while anesthetized from suffocation by vomited matter entering the trachea (*Med. Record*, February 11, 1888).

These dangers may, to a great extent, be avoided by preliminary free washing out of the stomach with large quantities of hot water, either by making the patient drink the water, or by using the stomach pump. Puncturing the intestines with a trocar through the abdominal walls, as a preparatory procedure before the operation, must be but rarely necessary, and is not entirely free from danger.

Enterotomy and Colotomy.—The operations of enterotomy and colotomy were at one time very frequently employed for the relief of intestinal obstruction. They are, however, at the present day, rarely justifiable as primary operations, unless the exact nature of the obstruction and the impossibility of removing it have been ascertained beforehand, or unless the condition of the patient is such that even an exploratory laparotomy would

be fatal. Enterotomy and colotomy are safe operations; they are very easily executed, and they generally empty the intestines. They, however, do not cure the obstruction. Moreover, the operation is performed in the dark; the opening may be made below the obstruction; the jejunum and not the ileum may be caught, and the patient die of consequent inanition; a gangrenous loop of intestine may remain in the abdomen, or a cancerous mass which might have been removed may subsequently cause death. It may be found necessary, after laparotomy, to perform enterotomy or colotomy as secondary operations, but as primary operations they are rarely warranted.

Incision in Laparotomy.—In performing laparotomy for intestinal obstruction a median abdominal incision is the best. Laparotomy for obstruction is always more or less of an exploratory operation. The frequent anomalous anatomical arrangement of the intestines, the difficulty of diagnosing the position and nature of the obstruction, and the fact that more than one obstruction may exist, all render it most desirable that the primary incision should be the one which is best adapted for a general exploration of the whole abdominal cavity. Moreover, with very few exceptions, all the procedures necessary for the relief of the various kinds of obstruction are most easily performed through the median incision. Even in case a tumor is felt in the abdomen I think that a median incision is better than an incision immediately over the mass which is supposed to represent the obstruction. For there have been cases reported in which the tumor did not represent the site of the obstruction; and others in which it was found necessary to execute more extensive intra-abdominal manipulations than could be performed through the incision over the tumor. In a case of acute obstruction from peritoneal adhesions and subsequent kinking of the bowel upon which I operated several months ago, there was a decided swelling in the right iliac region, and this swelling represented the obstructed loop of intestine; there was, however, at the same time, a diseased condition of the sigmoid which would not have been discovered, and could not have been treated, through any but a median incision.

Length of the Incision.—The length of the incision depends upon the condition of the abdomen as regards distension and upon the position of the obstruction. In all cases it is best, in this as in other abdominal operations, to begin with a small incision and to enlarge it if necessary. A 3-inch incision immediately below the umbilicus is the most convenient. In any case a heroic incision from ensiform to pubis will enable the surgeon to find the obstruction very quickly, but it is also very liable to kill the patient. I think, however, that in some cases there is less damage done by a large incision than by the effort to work with the hand or fingers crowded through too small an opening.

Relief of Distension.—If the distended intestines interfere with the search for the obstruction their contents should be immediately evacuated by a transverse incision on the convex surface of the bowel, from $\frac{1}{3}$ - to $\frac{1}{2}$ -inch in length. The gut should be held over a basin and the abdominal walls compressed. I think that incising the intestine is better than puncturing it by a trocar; for a trocar of sufficient size makes a rude opening which is as difficult to close as an incision and does more injury to the wall of the gut; and fine punctures with needles allow only the escape of gas and frequently leak. After the distension has been relieved by incision, the opening should be closed by silk or catgut sutures. This method of emptying the intestines is opposed by some surgeons; I have, however, relieved abdominal distension in this way and have frequently seen it done by others, and never with any bad results.

The distension may also be relieved by a method of Rehn, of Frankfort (*Centralbl. f. Chirurg.*, No. 30, 1887), which consists in washing out the stomach with large quantities of hot water during the operation, in the same way that I have already mentioned as a preliminary proceeding.

Position of the Obstruction.—If the position of the obstruction is represented by a tumor or if it has been diagnosed in any other way, the operator has a guide with which to begin his search after opening the abdomen. This guide, however, is often uncertain; in many cases the tumor has been found not to represent the obstruction, and in other cases the position of the obstruction, though accurately diagnosed before operation, has been changed on account of the intestinal distension. In one case of intestinal obstruction upon which I operated the obstruction was caused by cancer of an enlarged sigmoid. The position of the obstruction had been accurately diagnosed two weeks before operation by the presence of a mass felt in the left iliac region, and through the rectum, and yet this mass was found, at the operation, after some difficulty, deep in the abdomen, on a level with and to the right of the umbilicus.

If, when the abdomen has been opened, a loop of intestine is found decidedly distended beyond its neighbors, and more congested and of a darker color, it will generally lead directly to the obstruction. This is one of the most useful guides to the operator. It has indicated the position of the obstruction in the three cases to which my experience is limited, and has served the same purpose in the great majority of reported cases which I have read. Grieg Smith says that this guide has failed to indicate the position of the obstruction only once in the eight cases upon which he has operated. The distended loop should be followed from the stomach toward the rectum, a procedure which is easy in the large intestine, but in the small intestine, as the anatomical guides indicating the direction of the gut are of no practical

service, it is best to begin by following the loop toward the pelvis; or, if there is much congestion, the gut should be followed in a direction from the less to the more congested portion. On the other hand, if collapsed bunches of intestine are found, they will also lead to the obstruction if followed in an upward direction; that is, from the rectum toward the stomach. Collapsed portions of the intestine, however, are not easily discovered. They do not present at the abdominal incision like the distended loops, but they lie deep in the abdomen or pelvis.

If these guides fail to reveal the position of the obstruction, a systematic search should be begun. The usual hernial orifices should first be examined with the finger, and the operator should then examine the region of the cæcum. Most acute obstructions of the small intestine, whether due to false ligaments or to diverticula or to intussusception occur in the lower part of the ileum. The right iliac fossa is the commonest position of localized peritonitis in men, and Mickel's diverticulum is generally found about two feet above the ileo-cæcal valve. For these various reasons the right iliac region is the best place at which to begin the search for the obstruction. If the cæcum is much distended it is probable that the obstruction is in the large intestine; if the cæcum is not distended the obstruction should be sought along the small intestine.

In examining the small intestine it is best to go over the bowel continuously, loop after loop. Unless there is very much distension, which can not be relieved, it is not necessary to draw the intestine through the abdominal incision. If the sides of the wound are retracted the manipulation can be carried out altogether within the abdomen, for it is not essential to make a close scrutiny of the gut as when hunting for gunshot or stab-wounds. It is very rarely necessary to roll out all the small intestines upon the abdominal walls, or to practice eventration, which is always a dangerous proceeding. In all cases in which the eventration was employed in Senn's experiments upon dogs, a considerable degree of shock was observed and a number of the animals died within a few hours after operation (*Annals of Surgery*, January, 1888). When the intestines are removed from the abdominal cavity it is always difficult to keep them from becoming chilled, and there is great danger of putting too much drag upon the mesentery. I have seen eventration practiced upon one occasion and it is advocated by several surgeons. It is certainly a proper procedure if the obstruction can be found in no other way, but it is safest to try gentler methods in the beginning.

When the obstruction has been found it may be necessary only to relieve the strangulation and to close the abdomen. Or the nature of the obstruction may be such that an artificial anus is re-

quired; or again the condition of the gut and the character of the obstruction may necessitate resection. Heroic operations, like resection of the intestine—which are now so often essential for the relief of obstruction, would be less frequent if surgical treatment was instituted earlier. Resection in certain kinds of cases will always be required, but resection for gangrene alone will be required less frequently when the proper treatment of obstruction becomes more generally recognized.

After freeing an intestine obstructed by a band or a diverticulum, or through an aperture, the band or diverticulum should be removed as thoroughly as possible and the aperture closed in order to avoid future danger. Foreign bodies or intra-intestinal tumors may have to be removed by incision of the bowel. Gall-stones and intestinal concretions may be crushed by padded forceps or broken by a needle inserted through the wall of the gut, or, if in the small intestine, they may be pushed onward into the colon.

The formation of an intestinal anastomosis for the relief of obstruction is a rather old surgical proceeding which has recently been brought to notice by Professor Senn. It consists in shunting off—to use an electrical expression—the obstructed portion of the intestine by joining, by lateral approximation, a portion of the bowel above the obstruction to a portion below the obstruction. I believe that this operation has been performed but twice upon man and with unsuccessful results. It promises, however, with the improved technique introduced by Senn to be a most valuable addition to intestinal surgery, and in many cases will avoid the necessity of an artificial anus.

If an obstruction can not be relieved, and can not be removed by resection, we are obliged to make an artificial anus or an intestinal anastomosis, as the only means of saving the patient's life. The artificial anus can either be made immediately at the abdominal opening; or if the condition of the gut and the strength of the patient will admit of delay the abdominal incision can be closed and a subsequent colotomy can be performed. In case there is gangrene of the intestine, the gangrenous portion should be removed, whether or not the divided ends can be brought together. The lower end can be closed and an artificial anus can be made from the upper end. Or if the obstruction is so high up in the intestine that obliteration of the lower portion may cause inanition from deficient digestion, both ends should be brought to the abdominal incision; the upper end for an anus, the lower end to receive prepared food for further intestinal digestion.

Resection of the Intestine.—Resection of the intestine is necessary in case the obstructed bowel has become gangrenous; in cases where the obstruction involves the intestinal walls as in carcinoma; or in cases of volvulus or of intussusception

which cannot be reduced. It is strongly advised by some surgeons (W. T. Bull, *Medical Record*, Feb. 25, 1888) in case of obstruction from malignant disease to relieve the obstruction by the formation of an artificial anus and to remove the malignant mass by a subsequent operation. I think the propriety of this advice depends altogether upon the condition of the patient at the time of the operation. It is certainly desirable to remove malignant disease as soon as possible and to devote the subsequent operation only to closing the artificial anus. In the only case of obstruction from carcinoma upon which I have operated, I removed twelve inches of the large intestine at the first operation with a successful result.

If none of the various resection clamps are at hand the gut may be very conveniently closed, above and below the portion to be resected, by slightly slitting the mesentery perpendicular to the edge of the bowel, in a position where no vessels are seen; passing then a piece of rubber drainage tube or rubber band around the gut and clamping the ends of the rubber with forceps.

Treves strongly advises the removal of a triangular piece of mesentery along with the resected gut. This practice, however, is not essential to success, as cases have been reported where successful resections have been performed without the removal of a portion of mesentery (Sewart, *Am. Jour. Med. Sciences*, Jan., 1886.)

In case, however, the two ends of the divided gut are immediately united the triangular piece of mesentery furnishes a useful peritoneal graft to place around the line of sutures, as an additional protection against leakage of the intestinal contents (Senn, loc. cit.). If a portion of mesentery is removed the cut edges should be united, whether or not the operator intends to make an artificial anus. For this closes a dangerous aperture, which might, if unclosed, be the cause of subsequent obstruction. And in case the ends of the bowel are immediately united, it tends to prevent kinking at the suture line.

The profuse bleeding which often takes place during resection from the intestinal and mesenteric vessels may be avoided by clamping or ligating the mesentery in portions before the bowel is removed. And if it is desirable to remove a portion of mesentery the triangular piece can be folded upon itself and the continued suture to close the gap can be introduced before the mesentery is cut.

Artificial Anus after Resection.—When the intestine has been resected the question presents itself whether the cut ends should be immediately united and the continuity of the intestinal tract restored or whether a temporary artificial anus should be made and the gut reunited by a subsequent operation.

This is one of the most important points in the surgery of intestinal obstruction.

The latter procedure—the formation of a temporary artificial anus—is undoubtedly much the safer method in all cases of acute obstruction and in acute attacks in chronic cases. In acute obstruction the fact that resection is necessary implies that the case has been one of some duration. The patient is in a dying condition, and relief to be of any use must be immediate. Suturing the divided ends of the gut prolongs the operation; a difficult operation is performed under circumstances most disadvantageous for its success, not only because it is much more difficult properly to introduce the peritoneal sutures on account of the attenuated condition of the intestinal walls, but also, because the line of union is from the beginning exposed to the great tension and pressure exerted by the intestinal contents. Moreover in these cases the whole absorbing portion of the intestinal tract is often full of feces, and the patient is suffering from toxæmia from absorption of excrementitious products, and it is therefore desirable that these products should be eliminated as quickly as possible. If the gut is united after resection the feces before escaping must travel a longer road; and must overcome the partial obstruction which always exists at the line of suture from the inversion of the edges, and the greater or less interference with proper peristaltic motion. And finally if we refer to statistics we find by the statistics of Reichel that there is a very much greater mortality when the gut is immediately united, than when a temporary artificial anus is made.

For these reasons the temporary formation of an artificial anus is the safer procedure.¹ A case to which I have already referred was a beautiful illustration of the instantaneous relief afforded by an artificial anus. The patient, a woman 53 years of age, had suffered with complete obstruction for twenty-eight days. Feculent vomiting had existed for two days before operation. She had not closed her eyes in sleep for a week before operation. The abdomen was tremendously distended. After resecting the obstructed portion of intestine, which proved to be an enlarged carcinomatous sigmoid, I made an artificial anus. Large quantities of feces and gas gushed continually from this opening. A few hours after operation the abdominal walls had become relaxed, flabby, and depressed below the costal margins. And the patient slept almost continually for the first thirty-six hours after the operation.

I admit that an artificial anus is a misfortune to be avoided if possible, and the ideal method, in cases of obstruction where resection is neces-

¹And this rule is good, I think, even when the obstruction is high up in the jejunum. It is often stated that, in such cases, the divided gut should always be immediately reunited, to avoid the danger of inanition from deficient digestion. But if both ends of the bowel are brought to the abdominal opening the patient can be fed not only by the mouth, but also by specially prepared food introduced into the lower intestinal opening. A person has been nourished for a considerable length of time in this way through the intestinal opening existed in the duodenum.—(*Lancet*, 1888.)

sary, is immediately to restore the continuity of the intestinal tract. This, however, can only be done with safety in those cases which are operated upon in the very beginning of the disease, where there is no tympany, no fecal accumulation and no exhaustion. But it is in just such cases that resection is very rarely necessary.

I do not think that improved technique in the methods of resection will enable us to do away with an artificial anus, so much as improvement in diagnosis, and a more general recognition of the value of early operation. When a temporary artificial anus is made after resection, it is a useful procedure to join the divided ends of intestine for at least one-half their circumference before uniting them to the abdominal incision. And when the ends of gut are fastened to the wound the mesenteric attachment should be placed in the lower angle of the wound, so that the lateral surfaces of the bowel fall in contact, and the subsequent closure of the anus by an enterotome will be simplified. In order to facilitate the closure of the artificial anus, I think that two perforated discs of metal might be introduced—one into each piece of bowel, from one to two inches from the free ends, and united to each other by sutures on the peritoneal aspect; in a way exactly similar to that employed by Senn for producing lateral approximation in making an intestinal anastomosis. When proper, the gut could be incised through the perforations of the discs, and the fecal discharge diverted through this channel.

Before attaching the bowel, the abdominal incision may be prepared by drawing out the parietal peritoneum and suturing it to the skin margin or to the transversalis fascia. The intestine can then be stitched to the abdominal wall by sutures involving all but the mucous coat. Though this method is neat and desirable as it places large peritoneal surfaces in contact, yet it uses valuable time and is not at all essential to success. The intestine can be fastened directly to the skin margin by sutures which transfix all the coats of the gut and the whole thickness of the abdominal parietes, or only the transversalis fascia and skin, or in case of thick abdominal walls, the skin alone. The main point in any case where the intestine is open from the beginning is to obtain firm, tight suturing and accurate apposition. The peritoneal surface of the intestine and the raw surface of the abdominal wound are capable of forming a firm union probably as soon as if two peritoneal surfaces were brought in contact.

It is desirable to leave the closure of the remainder of the abdominal wound until the bowel has been attached to the incision, as it may be necessary to make a final irrigation.

Closure of Abdominal Incision, Complicated by Distentions.—When an artificial anus has been made the distention subsides so rapidly that there is generally no difficulty in closing the abdominal

wound. In other cases of obstruction, however, where resection has not been necessary the protrusion of distended intestines often causes great embarrassment when the operator attempts to close the incision.

There are several methods of meeting this difficulty; by compressing with large flat sponges, or by tucking a wet towel around the intestines under the abdominal parietes, and closing the wound over this, the towel being gradually withdrawn as the abdominal sutures are fastened. I think, however, that it is very unsafe to close an abdomen when the intestines are enormously distended. The dangers to be feared from were abdominal distensions unconnected with peritonitis are very great. This distension, incident to paralysis of the intestinal muscles is the cause of death, in those cases to which Tait has called attention, when, after ovariectomy a patient will die with an enormously distended abdomen and all the symptoms of peritonitis, and yet post-mortem examination will reveal no inflammation of the peritoneum.

The great pressure within a tympanitic abdomen can be realized and all of us who have made autopsies upon persons who have died of peritonitis, where it often requires the exercise of considerable strength to insert the hand between the intestines and the parietes. Such pressure exerted against the diaphragm, impedes the action of the heart and lungs, already weakened by the anesthesia, and may cause sudden death from heart failure.

And, again, intestines which are overdistended by gas are themselves subjected to a form of obstruction caused not only by the muscular paralysis incident to overdistention, but also by the sharp flexures or kinks in the bowel produced by traction upon the mesentery. And finally, in many cases of intestinal obstruction the coats of the bowel have become so attenuated and degenerated from prolonged tension, that there is continual danger of a rupture unless this tension is quickly relieved. For these reasons I think it is safer to empty the intestines by incision before closure, so that the patient shall not leave the operating table with a distended abdomen.

Subsequent Obstruction.—A continuation of obstruction is always to be feared even after the relief by operation of the original cause. Thus a loop of intestine strangulated by a band or a diverticulum may be completely relieved by the surgeon, and yet, all the signs of obstruction may continue, and the patient die unbenefited by the operation. This continuation of obstruction may depend upon distention, upon general peritonitis, or upon local paralysis in the damaged portion of intestine; this last cause frequently producing death in strangulated hernia where fecal vomiting and constipation continue even after reduction of the bowel.

In some cases the strength of the patient is sufficient to tide him over the period during which the intestines are recovering themselves. In other cases where the patient is *in extremis*, the alleviation furnished by relieving the original obstruction is not sufficient, and more radical treatment must be instituted. In these latter cases I think that in addition to relieving the strangulation a temporary artificial anus should be made as the only means of furnishing this essential quick relief. Two months ago I assisted Dr. Joseph Price at a laparotomy for intestinal obstruction caused by pelvic peritoneal adhesions. The obstructed bowel was freed, and the perviousness of the intestinal tract restored. Before closing the abdomen a loop of ilium was incised and a considerable quantity of flatus and fluid feces escaped—with a marked beneficial effect immediately perceptible in the character of the pulse and respirations. The intestinal incision and the abdominal wound were closed and the patient returned to bed. All the signs of obstruction, however, continued, there being absolutely no escape of flatus or feces, and the patient died in twenty-six hours. Post-mortem examination showed that the operation had been thoroughly performed, and that the obstructed portion of intestine had been entirely relieved. If in this case the incision in the ilium had not been closed but had been attached to the abdominal wound as a temporary artificial anus, so that the relief, so noticeable when the gut was first incised, had continued, I think that the chances of recovery would have been much better.

It may in some cases be a difficult matter to decide upon the necessity of an artificial anus for the purpose we are considering. In doubtful cases, however, it is best to err on the safe side and to make one. And if in any case of intestinal obstruction, after the abdomen has been closed, the obstruction is found to continue, it is not even then too late to re-open the incision and to perform enterotomy.

Artificial Anus for Peritonitis.—The value of this procedure is so great that I would urge its use not only for the peritonitis and paralysis following strangulation of the intestine, but also in peritonitis or intestinal paralysis of any other origin where there is great abdominal distention and fecal accumulation.

I have seen death result in two cases of typhlitis causing general peritonitis—with absolute constipation, fecal vomiting and all the symptoms of acute obstruction. In one case the abdomen was opened and the peritoneum was irrigated and drained. The obstruction, however, continued and the patient died. In the great majority of cases of purulent peritonitis the recognized surgical treatment of irrigation and drainage is sufficient. In all cases the irrigation and drainage benefits the inflamed peritoneum. It, however, takes some time for the intestines to recover themselves so

that the paralysis and consequent obstruction are overcome, and during this time, the feculent vomiting, the absorption of feces, the constant hiccough, the impediments to respiration and heart action may kill the patient before the results of the irrigation have time to show themselves.

It is in such cases that the additional relief afforded by enterotomy may save life.

If an abdominal drainage tube is also used the artificial anus can be made by Nélaton's incision for enterotomy, in either iliac region.

Continual Irrigation of the Peritoneum.—In cases of intestinal obstruction where there has been much peritoneal irritation, or where the condition of the strangulated bowel is doubtful and yet resection is not performed, continual irrigation of the peritoneal cavity with warm water for several hours after the operation is of great value. Such irrigation is of value: by continually washing from the peritoneum all septic products; by keeping the drainage tubes free, and the peritoneum open to drainage for the longest possible time; by keeping the irritated intestines continually floating in, or surrounded by a clean unirritating fluid, thus preventing the adhesion and matting together of knuckles of bowel which is such a frequent cause of subsequent obstruction.

Continual irrigation can be practiced by using two or more drainage tubes, or one reflux tube. Upon one occasion I used two glass tubes placed in the pelvis, and one large rubber tube running from the epigastrium to the lower angle of the abdominal incision. The case was one of intestinal obstruction caused by peritoneal adhesions and kinking of the ilium. There were several ounces of pus in two pockets in the pelvis; the sigmoid was gangrenous at one spot and there existed a fistulous opening into it; and about 12 inches of ilium was in such a condition that I should have resected it, had I not been afraid of the patient dying upon the table. The abdomen was flushed with warm distilled water every two hours, for twenty-four hours after the operation. The water being injected into one tube and allowed to flow from the others until it became clear. I think that it was this irrigation which saved the patient's life; all septic products being washed away from the diseased gut until healthy reaction became established.

In conclusion I will summarize the points to which I beg to call the especial attention of this Section:

The use of an exploratory laparotomy in cases in which the diagnosis of intestinal obstruction is doubtful.

The necessity of very early operation in the treatment of this condition.

The necessity of a temporary artificial anus; after resection for obstruction.

The value of a temporary artificial anus, as a

means of avoiding subsequent obstruction, when there has been great abdominal distension and fecal accumulation.

And finally, in some cases, the value of continual irrigation of the peritoneal cavity.

THE IMPUTATIONS ON BETA-NAPHTHOL

Read in the Section on Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOHN V. SHOEMAKER, M.D.,
OF PHILADELPHIA.

Naphthol, as I remarked in a paper read before the Philadelphia County Medical Society, on October 17, 1883, published in THE JOURNAL, on November 3, 1883, stands in the same relation to naphthaline as phenol does to benzol and cresol to tuluol. If one of the six molecules of hydrogen in benzol is replaced by hydroxyl, phenol is obtained, and in a similar manner are cresol and naphthol formed. The inference may therefore be safely drawn, through this analogy of formation and similarity of constitution, that their products are similar, and in consequence their general effects, so far as toxic quality is concerned, similar in action on the animal organization. This inference I accordingly drew, and proceeded to experiment with β -naphthol as probably affording a product equally antiseptic and harmless with that offered by the other form.

To do this effectively it was of course necessary to discard the commercial varieties, which contained sulphur and sulphurous acid and yield when sublimated (besides the naphthol crystals,) sulphuretted hydrogen, thionaptholes, carbolic and cresylic acid, thiophenols and other products, in order to secure a perfectly pure product. This I accomplished by passing a current of steam through an aqueous solution of naphthalin, expelling all volatile by-products, and thus obtaining naphthol in a state of the greatest purity. The first product is of the beautiful silvery scales which I exhibited, supplemented with others shown illustrating the effect of the further sublimation of the product, resulting in elegant white crystals; which procedure, however, as I remarked at the time, has the effect of producing a slightly pungent and disagreeable smell, evidencing a retrograde metamorphosis. So much for securing a chemically pure product.

Now as to the other mode of preparation, the product of which is not pure. The method of producing commercial naphthol is the one usually employed in effecting hydroxyl substitutions. This consists in first producing monosulphs (substitutions accomplished by means of strong sulphuric acid at certain temperatures), and by then melting the monosulphonated compound with sodium hydrate. In the case of the naphthalin treated thus

with sulphuric acid, the naphthalen-monosulphonic acid is produced according to the formula, $C_{10}H_8 + S.O_4H_2C_{10}H_7S.O_3H + H_2O$. This, upon being melted with sodium hydrate, yields naphthalin hydroxyl, or naphthol, as per formula $C_{10}H_7S.O_3H + 2(NaOH) = C_{10}H_7S.O_3Na + OH_2 + NaOH = C_{10}H_7OH + S.O_3Na + OH_2$. This naphthol is usually purified by distillation and brought to market as crystalline masses of a reddish color and of a pungent, disagreeable odor, as shown by the specimen which I exhibited to the Society.

Simply dependent upon difference of temperature employed in the sulphonation of the naphthalin, α -naphthol or β -naphthol is produced by these processes.

At the time when I read my paper before the Philadelphia County Medical Society, there was little question of the relative merits of α -naphthol and β -naphthol. The assumption in my mind was, for the reasons assigned, that there could be no essential difference in the qualities of the products. Since that time, however, the question, then arising, as to their relative merits finds frequent mention in medical journals and is now likely to be sifted to the bottom. The question is determinable on a sufficient amount of empirical evidence, and in no other way. I have said that the difference in the two products is dependent simply upon difference of degree in the heat in the evolution of the products, and I have also given presumptive proof that sublimation pushed beyond a certain point produces ill-effects in the product. There is no evidence yet before me which would go to show that the products of β -naphthol with which experiments were made to its discredit were pure, or were anything else than the commercial article, which I have already shown to be impure. Nor could the answer be made to this position by saying that both products probably stood upon the same footing, as being of the commercial kind, both impure; for as the condition which produces different varieties is dependent upon more or less heat, it may very well be that difference of degree in heat affects also in different degrees the elimination of by-products. In one word, the basis of experimentation, if not scientific, must make all reasoning from it unscientific. Therefore I have nothing to say on this topic, but that the question of whether or not the β variety of naphthol is poisonous is, so far as published statements go, not determined, and that it cannot be conclusively settled until commercial products are ruled out and a sufficient number of experiments in competent hands have been tried. So far as I have seen comments upon the use of β -naphthol to its disadvantage I have seen it assumed that α -naphthol has no toxic quality at all. It is not so explicitly stated but the inference is left in the reader's mind that α -naphthol is not a toxic, and that β -naphthol is.

I have now cleared the way to the true basis

for the determination of the question. The question is not whether β -naphthol has or has not some toxic quality, but which of the two naphthols has, if any, more toxic quality than the other. To the determination of the question of absolute poisonousness I contribute my mite by repeating some of the results of my experiments and practice already published and since amply confirmed and increased. It is true that my results, relating only to β -naphthol, are not relevant to the point as stated, but they at least afford some contribution to the general question of absolute, not relative, toxic effect. They will at least, as far as they go, show that the pure β -naphthol is not poisonous in any sense beyond that in which many medicines are poisonous. In the broadest sense anything not food is poison and even through idiosyncrasy what is to ordinary persons food is sometimes to others poison, as witness the effect of strawberries and many other foods upon certain subjects. Ascending from this relativeness of poison to abnormal pathogenic conditions lies an immense range of poisonous qualities inherent in certain forms of matter, until we reach what we conceive of as true poisons merely because they present themselves in small bulk.

I have dissolved half a grain of pure β -naphthol in 3,000 parts of water and have taken it myself. It produced some heartburn and dizziness and a slight sensation in the lumbar region. These symptoms disappeared after taking the same dose for several days in succession, the urine exhibiting traces of naphtholic compounds, but no albumen or blood. I then increased the dose to four grains per day for six successive days, followed by no untoward symptoms, increased warmth in the stomach after imbibition being followed by increase of appetite. Dr. Schofield, of Albany, reported to me that, at my request, he had used the β -naphthol experimentally, and afterwards largely in practice in the Albany Hospital, where its excellence is now firmly established, being used to the almost entire exclusion of other antiseptics for wounds, and for the disinfection of the wards of the hospital. His experience, as well as that of Kaposi and others, has led me to employ it in both private and hospital practice with eminent success. I found that it fully sustained the claim of Kaposi as to its efficacy in scabies, psoriasis, and chromophytosis, as well as in some of the chronic forms of eczema, in which it not only allayed the attendant itching, but lessened infiltration. I have said that I found it a most useful detergent and deodorant in treating wounds and indolent ulcers, in removing the fetor and establishing healthy action of the parts. In aqueous solutions of half a grain to the fluid ounce of water, I have used it to great advantage, as a vaginal injection, in leucorrhœa and uterine carcinoma. Equally efficacious have I found it in both male and female gonorrhœal affections.

In diphtheritic affections it forms a most useful gargle, and removes well the fetor of catarrh and other affections of the buccal cavity. In my hands, combined with lard or gelatin, it has also been very effective in squamous and fissured eczema.

To proceed further would be only needlessly to repeat the account of my experiments and practice, published in THE JOURNAL, of the date mentioned, so I here pause with the mere statement that I have seen no reason since to change my opinion of the efficacy and innocuous characteristics of β -naphthol, if pure, and to reaffirm from my own experiments and from those made at my instance, that the β -naphthol, when in that condition, has been found through long trial one of the most useful medicines and medicaments that have ever come within the physician's power to employ in the treatment of various complaints. Naphtha and petroleum, those wondrous reservoirs for the needs and arts of mankind, have nothing in their repertory greater than this to boast. Late experiments of mine with it in the treatment of obstinate constipation have had results, to me, of the most surprising and gratifying kind. I conclude, therefore, by reasserting all that I have previously said elsewhere of the excellence of pure β -naphthol. As none of my patients have experienced from its administration the toxic effects mentioned in some medical journals, I cannot be brought to consider it absolutely toxic. I await the result of properly conducted experiments to determine the relative toxic quality, if any toxic quality inhere in them, of the two varieties of naphthol.

TWO CASES OF MELANOTIC TUMORS IN THE LUNGS.

BY F. WATSON TODD, M.D.,
OF STOCKTON, CAL.

I have failed to find, in a careful reading of the best medical journals of our country, for twenty-five years, a case in any respect like two that have occurred in my practice, a report of which, I have thought, was due to my brethren of the profession, to whom I owe so much.

In the spring of 1864, while living at Auburn, Cal., I was called about 9 A.M. one day, to see a Mr. R., about 60 years of age. I found him in bed, coughing up and expectorating, but not vomiting, large quantities of black grumous blood, since midnight. His wife told me he had returned the evening before from Sacramento, where he had been for a month, under the care of Dr. F., whom I knew as one of the leading physicians of that city, and who, she said, had been treating him for some hepatic disease.

On auscultation I found below the right nipple, lower lobe, a considerable tract impervious to air, but a clear vesicular murmur elsewhere through-

out the right, and the whole of the left lung. The heart sounds were normal, no increase of temperature, no apparent cancerous cachexia. I had no difficulty in arresting the hæmorrhage, and wrote to his Sacramento physician describing his condition, and received an answer, saying that I was mistaken in the belief that I had found disease implicating the right lung; that he was suffering from chronic hepatitis, and that I would find that the hæmorrhage was from the stomach, and that it would prove to be salutary.

The second day his improvement continued, and he was put on the *tr. ferri chloridi*. At my morning call, on the third day, I found my patient dressed, and at the table, with a good sized beefsteak, eggs, warm rolls, and coffee before him, with which he was enjoying the morning paper. After a jocular remark I dismissed the case, and rode to the country. Upon my return to town an hour afterwards, a gentleman whom I met said: "So Mr. R. is dead?" I replied "no," and told him how I had left him an hour before. "Nevertheless he is dead," said he. It was so. When he had finished breakfast, his wife, wishing to sweep the room, had thrown over his head a light covering, that he might not inhale the dust, and when she removed it she found that he had passed quietly away. In spite of much opposition I was permitted to make an autopsy; a promise having been exacted that I would confine the examination to the thoracic cavity. Upon removing the sternum I verified my diagnosis of pulmonary disease, by the discovery of two melanotic tumors, the size of half a hen's egg, and the collapsed shriveled remains of a third, from which came the black blood. There was extensive pigmentation of the surface of both lungs, and a large ante-mortem clot in the left ventricle, which, I presume, was the immediate cause of his sudden death, as there had been no more hæmorrhage.

In November, 1872, I had removed to this city, and at 11 o'clock one night was called by the landlord at my hotel to see Captain F., a bachelor, æt. about 55 years, whom I found in the office, leaning over a cuspidor, breathing with great difficulty, with a cold moist surface, small frequent pulse, and expectorating, with almost no cough, a considerable quantity of frothy serum, which had a slight pinkish tinge. These symptoms soon gave way under the use of the *fl. ext. ergot* and *belladonna*, and the Captain had a good night. I made, the next morning, a careful examination, and found, on auscultation, a dull space in the right lung below the nipple, the size of the palm of a small hand. I failed to find evidences of disease in the heart, kidneys, or any other organs. My patient returned to his mine in the mountains, some eighty miles away, by stage. In a few weeks he visited Stockton again, and again I was called, about the same hour at

night, to the hotel office, to find the Captain in the same condition described above. He was relieved as before. It seems that he had been given a bed in a cold room, as formerly, and as soon as he had got between the cold sheets the paroxysm began. Whether the medicine he took, or the mountain air had any effect or not, he was free from these attacks at home, and enjoyed apparently fair health.

The following April I requested him to meet me in San Francisco, when our State Medical Society would be in session. He came, and the first night in that city, had a severe attack. He was seen by two of the most eminent men of the city, Professors in each of the medical schools, and each declined to express an opinion as to the nature of the disease. Learning from him that he would that summer visit his old home in Virginia, I induced him to go by way of New York, and gave him a letter to the late eminent Professor F., with a detailed statement of his case. He was examined carefully by that gentleman, who was kind enough to write me his opinion in full, in which he said that he, with his son, the present distinguished Professor, of New York City, had found slight hypertrophy of the left ventricle of the heart, but that there was more serious disease of the kidneys, the urine showing sufficient albumin to warrant a diagnosis of chronic interstitial nephritis.

The Captain married after his return to this State, had two children, removed to Stockton, and a few months after had a hæmorrhage, not severe, of dark grumous blood. This was repeated every few days with little cough, until he became so weak that he was confined to his bed, and finally died from exhaustion. An autopsy, made in the presence of a half dozen of the leading physicians of the city, revealed large melanotic tumors of the lower lobe of the right lung, from the rupture of one of which came the peculiar hæmorrhage.

As in the former case, I could only get permission to make the inspection upon giving a promise that I would confine it to the thorax, consequently I was unable to verify the diagnosis of renal disease, but there was no hypertrophy of the heart ventricle. The absence of indications of malignant cachexia made the diagnosis in both of those cases difficult, and in neither could I do more than fix the seat of the disease, and even this found dissent from some of the ablest men of our profession.

May 19, 1888.

THE MEDICO-CHIRURGICAL COLLEGE of Philadelphia and the Philadelphia Dental College have placed a contract for a large building to accommodate both schools.

MEDICAL PROGRESS.

CODEINE TO RELIEVE PAIN IN ABDOMINAL DISEASE.—DR. T. LAUDER BRUNTON says of the use of codeine to relieve pain in abdominal disease: The class of cases in which I have used it is, I think, somewhat different from those in which it has previously been recommended, because while Barbier, Aran and others have chiefly employed it in gastralgia and painful disorders of the stomach, I have used it chiefly in pain affecting the intestines and lower part of the abdomen. The kinds of cases in which I have used it have been very varied. As examples I may shortly described one or two. In one case which I saw with Dr. Eccles, there was high temperature, intense pain in the right iliac fossa, with considerable swelling, so that there could be little doubt that there was inflammation around the cæcum, although examination after the acute symptoms had subsided showed that there was also pelvic cellulitis. In this case one grain of codeine, given in the form of a pill, relieved the pain at once, and repetition of the dose whenever the pain began to return prevented its becoming at all severe.

In another case, seen with Dr. Philpot, of Croydon, a lady, aged 50, had pneumonia of the right base, a greatly dilated heart with very irregular action, pulse so rapid and weak that it could hardly be counted, and pain over the epigastrium and spreading out from it. She was slightly jaundiced, and a tumor was felt in the right lateral abdominal region, which descended with respiration, but was partly covered by intestine, and could be moved from side to side, so that it seemed to be renal rather than hepatic. As no *post-mortem* examination was obtained the exact diagnosis could not be established, but the administration of codeine in half-grain doses relieved the pain, as Dr. Philpot said, "as if by magic."

In another case, seen with Dr. Pardington at Tunbridge Wells, there was pain in the abdomen depending upon a mass of impacted feces in the transverse colon. In this case codeine seemed to be especially indicated, as one wished to relieve the pain without interfering with the action of the bowels. In grain doses codeine relieved the pain, and the use of copious enemata, aided by washing out the stomach, cleared away the impacted mass which had given rise to the disturbance. I have tried codeine in cases of long-continued abdominal pain for which no definite cause could be assigned, as no tumor could be felt, and the functional disturbance did not seem sufficient to warrant a diagnosis of malignant disease. I have tried it in cancer of the liver and pancreas with success in relieving pain, and also in numerous cases where the age of the patient, the presence of diarrhoea, tenderness on pressure, and visible per-

istaltic movements, and thickening of the gut, easily perceptible on palpation, led to the diagnosis of malignant disease in the intestine, although inability to obtain a *post-mortem* examination prevented the confirmation of the diagnosis. In such cases I generally begin with half a grain, in the form of a pill made up with extract of gentian, three times a day; and if this is insufficient to control the pain I increase the dose to a grain, and give it as frequently as seems necessary. As a rule, I find that it does not produce drowsiness, nor has it interfered with the digestive functions.

To sum up, the results I have obtained from the administration of codeine have satisfied me that it has a powerful action in allaying abdominal pain, and it can be pushed to a much greater extent than morphine without causing drowsiness or interfering with the respiration or with the action of the bowels. It is, therefore, specially indicated in such a case as Dr. Philpot's, which I have already mentioned, where the dilated heart and consolidated lung tended to make one afraid of morphine. Codeine is also specially indicated in a case like Dr. Pardington's, where one wished to relieve the pain without interfering with the action of the bowels. On the other hand, in cases where there has been much diarrhoea, as in some cases of malignant disease of the colon or rectum, the absence of any tendency to lessen peristaltic movement is rather a disadvantage to codeine as compared with morphine or opium.

I have found that in cases of long-continued enteralgia without organic disease, it has continued to relieve pain for months together, without the dose being increased beyond one grain three times a day, and I found the same to be the case where the presence of a tumor, in addition to other symptoms, had led to the diagnosis of malignant disease.

It is interesting to follow the vicissitudes of a drug, and to notice how its use extends or diminishes until at last it finds its right place and maintains it. Thus digitalis, while mentioned in the *London Pharmacopœia* of 1721, was excluded from that of 1746. It again appeared in 1788, and since then it has held its place.

Possibly codeine, after falling into almost complete disuse as an analgesic for many years may again regain a more or less important place amongst the remedies which enable us to relieve pain.—*British Medical Journal*, June 9, 1888.

OLD-STANDING EMPYEMA SUCCESSFULLY TREATED BY "PERFLATION."—DR. CHARLES E. OLDMAN writes: The following case is of interest, and suggests a more extended trial of this method of treatment, as recommended by Dr. Wm. Ewart in *The Lancet* of July 31, 1886.

F. A., aged 18, had scarlet fever in July, 1882, followed by an attack of pleurisy, with effusion terminating in empyema, which was first opened

by me in consultation on January 29, 1883. Some time after this he was admitted into Guy's Hospital under Mr. Bryant, when a free opening was made, and the usual method of treatment by irrigation was carried out, but with little benefit. After a long absence in the country he was admitted a second time into Guy's Hospital, when a portion of rib was resected, so as to allow better drainage and facilitate the washing out of the pleural cavity; still the discharge continued to be very profuse, in spite of every attention being paid to his general health and more than one visit to the seaside. On April 27 of this year, being five years and three months since the date of the first operation, I commenced the method of treatment by "perflation," or the injection of air which has passed through a strong solution of carbolic acid. For this purpose a solution of 1 to 10 was used. At first considerable difficulty attended the insertion of the cannula, owing to the narrowing and tortuosity of the sinus leading into the pleural sac, which had not been occupied by a drainage tube for many months, so that a very small one was used; but this did not prevent a sufficient supply of air being injected, although it somewhat retarded the escape of the pus. The operation was repeated once daily by the patient himself. At first the discharge appeared to be but little influenced by treatment until about the eighth and ninth days, when a large quantity of very offensive pus was expelled—indeed, so offensive was it that the inmates of the house had to leave it for an hour or two after the patient had used the injection. After this the discharge diminished considerably, becoming less offensive, and finally ceased altogether on the eighteenth day. He is now quite well, and daily gaining strength and flesh. During the first injection urgent symptoms of dyspnoea and fainting occurred, quickly passing away, however, on discontinuing the injection and the patient assuming the horizontal position. This I take to have been caused by the intra-thoracic pressure having become suddenly increased, and the action of the heart being interfered with thereby. It only occurred once, and probably would not have arisen at all if the opening had been large enough to allow of the pus escaping in a corresponding ratio to the admission of the air, or if there had been a counter-opening. Altogether it is a very simple and satisfactory method of treatment.—*Lancet*, June 16, 1888.

THE HOT INTRA-UTERINE DOUCHE IN PURULENT ENDOMETRITIS.—In a paper read before the Gynæcological and Obstetrical Society, of Baltimore, May 8, 1888, DR. WM. E. MOSELEY, called attention to a method of treatment that, although not new, has received far less attention than its merits deserve, for in his experience it has been perfectly safe, easy of application, has caused the patient no pain or serious after-symptoms, and

above all has been promptly *curetive* in its effect; *free douching* of the uterine cavity with warm, or rather hot water, either plain or medicated. The water can be injected with a fair amount of force; it reaches all portions of the endometrium, washes the discharge out of the mouth of the glands, and so reaches parts that cannot be reached by the ordinary applications, and has no destructive effect on the mucous membrane as do the more active caustics.

It is important to have the cervical canal freely enough dilated to permit a ready exit of all the water injected, and in many cases of any considerable standing such will be found to be the case. He has used a double catheter and has injected directly through a small flexible male catheter, and has found both methods equally satisfactory. One thing he would insist upon, is the use of a large amount of water, from one to two gallons, and at a temperature of from 100° to 110° F. He has used the water clear and also medicated, and both have given equally satisfactory results.

This method of treatment is perfectly rational, and is the procedure that any one would follow in any other cavity containing pus.

He believes that we would get much better results from intra-uterine medication, if we took the precaution to first *thoroughly* remove all secretions from the endometrium before making any application. This he has tested, and with only the happiest result.

THE COMPOSITION OF NORMAL URINE.—MM. YVON and BERLIOZ have recently presented a memoir on this subject to the Académie des Médecine. Among 6,000 analyses they chose as data those in which there was no sugar, no albumin, and no bile pigments, and which appeared to accord with the mean elimination now admitted. Of these there were 661, including 347 from males and 314 from females, all adults, and all French. The following table shows the results:

| | Males. | Females. |
|---------------------------------|----------|----------|
| Quantity in 24 hours - - - - | 1300 cc. | 1100 cc. |
| Density - - - - | 1022.5 | 1021.5 |
| Urea, per litre - - - grams - - | 21.50 | 19 |
| " " 24 hours - - - - | 26.50 | 20.50 |
| Uric acid per litre - - - - | 0.50 | 0.55 |
| " " 24 hours - - - - | 0.60 | 0.57 |
| Phos. acid " litre - - - - | 2.50 | 2.40 |
| " " 24 hours - - - - | 3.20 | 2.60 |

It is seen that the quantity of the various elements eliminated is greater in males than in females, though in the case of uric acid there is but little difference, this being due to the less active life of females. The ratio of the quantity of uric acid eliminated in 24 hours to the amount of urea is in males 1:44.50; in females 1:36.50; mean 1:40.50. The ratio of urea to phosphoric acid is about 1:8 instead of 1:10, as has been supposed.—*Bulletin Médical*, June 20, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 14, 1888.

A SECTION OF PHARMACY AND MATERIA
MEDICA.

Exhibitions of pharmaceutical preparations, surgical instruments and appliances, and to some extent periodicals and books, in connection with the annual meetings of the American Medical Association, and with many of the State Medical Societies, have been increasing in magnitude from year to year, until they undeniably attract no inconsiderable part of the attention of many of the members attending these meetings. As stated in the *American Lancet* for June, 1888, the "exhibition is simply a collection of drummers with their samples. They are polite, intelligent and obliging, but after all they are tradesmen pure and simple, whose sole object is to make money for the firms they represent." And we may add that, as such tradesmen, they have the right to assemble in any city where the Medical Association may hold its annual session and procure such rooms for their exhibition as they please, and conduct it under such regulations as they may adopt. The constitution and by-laws of the American Medical Association contain no provision for any such annual exhibition; and the Committee of Arrangements are not required to give any other attention to the subject than to be sure, in engaging the necessary rooms for the accommodation of the meetings of the Association, that no such exhibitions shall be allowed in the vestibule, ante-rooms, or halls leading to or adjoining any of the rooms to be occupied by the Association or any of

its Sections. Beyond thus securing the accommodations necessary for the meetings and business of the Association on such terms as will prevent exhibitions and obstructions of every kind from being placed on the same premises or in the entrances thereto, we do not see how the Association or its Committee of Arrangements can rightfully have anything to do with combinations of pharmacists, food and drink manufacturers, instrument makers, etc., for the joint exhibition of their various samples.

So far as the real interests of the medical profession are concerned, and especially the interests of the members of the American Medical Association, there is no need for any such extensive exhibit of incongruous materials. The several Sections of the Association are the proper places in which new remedies or new preparations of old ones, new or improved instruments and appliances, should be presented by some member who has investigated the article and deems it worthy of the attention of the profession. It is in the appropriate Section that all alleged novelties and improvements can be most advantageously examined and their merits and demerits be intelligently discussed. It is doubtful whether a single new remedy or new appliance in surgery of practical value has been found during the last thirty years, that has not been either described or exhibited in some one of the Sections.

The establishment of a special Section of the Association, to be called the Section of Pharmacy and Materia Medica, to supersede the outside exhibitions, was suggested in the *American Lancet*, and in some other periodicals. If the proposed new Section is to be made a room for the general exhibition of drugs and pharmaceutical preparations, the size of the room and the expense and time required for fitting it up would add materially to the labor of the Committee of Arrangements and to the orders on the Treasurer of the Association; and yet perhaps be able to present a less variety of articles than could be readily seen in half of the regular apothecary shops in the same city. But if the object is to be the presentation of only really new remedies and improved preparations and have their value carefully canvassed, the present Section of Practice of Medicine, Materia Medica and Chemistry is better constituted for doing the work well than it could be done by a Section composed of pharmacists and

students of *materia medica* only. The presence of a large proportion of practitioners of actual clinical experience is essential for the proper consideration of such articles as are here intended.

TYPHUS ICTERODES.

DR. GEORGE DIAMANTOPULOS, of Smyrna, has just published, through Urban and Schwarzenberg, of Vienna, a volume of 135 pages on "Typhus Icterodes of Smyrna," which appears at times endemically, and from time to time epidemically on the coast and in the islands of the *Ægean* Sea, generally in the summer and autumn. From a study of the disease during the past fifteen years Diamantopulos concludes that it is an acute, miasmatic, non-contagious disease. It is a disease *sui generis*, and notwithstanding the great symptomatic similarity between it and many classic affections, yellow fever, Griesinger's bilious typhoid, and many cases of bilious remittent fever, it is identical with none of these. Thus far its etiology is obscure.

The symptomatology of the affection is not uninteresting. The disease begins with a very intense chill, or with a simple rise of temperature, with, in many cases, an intense headache; the temperature usually going, on the second day, to 39.5° or 40° C. There are pains in the muscles and joints, especially of the lower extremity, pains in the spine, especially in the lumbar region, a feeling of muscular weakness, so that the patient cannot sit up in bed, oppression of the chest, and later præcordial anxiety, the sensorium is dull, the facial expression stupid and apathic, and the patient is anxious and restless, casting himself about in bed, and is sleepless. From the beginning and through the first stage of the disease the face is red and turgescient, the eyes red, injected, moist and glistening, and to a certain extent prominent, the facial expression being a good deal like that of a drunken man. The tongue is broad, looks swollen, is moist and whitish, whitish-yellow, or yellowish-brown. The epigastrium is sensitive on pressure, as are the hypochondriac regions. The patient complains of a sensation of tension and fullness, is somewhat swollen, and gives some resistance to palpation. The liver is enlarged, and the spleen to a less extent. As a rule, the mesogastrium and hypogastrium are soft and not sensitive. The

ileo-cæcal region shows nothing abnormal. The muscles of the extremities, especially of the calves and forearms, are sensitive to touch, and later contract spontaneously and on pressure.

On the second or third day vomiting appears, containing ingested food at first, generally uncolored, but later, sometimes even at the beginning, it consists of "bilious," yellowish-green, watery masses. It occurs tolerably often, is often obstinate, and may be caused by pressure in the gastric region. In such cases the stomach is sensitive, refusing the slightest quantity of food or medicine. Constipation appears at some time during the first two or three days, to be replaced by copious watery, yellow colored stools. In the subsequent course of the disease dysenteric, bloody-mucous stools appear in many cases, with colicky pains. A prominent and frequent symptom is a feeling of burning and contraction in the pharynx, which often makes swallowing difficult and painful; but besides slight redness and swelling of the mucous membrane there is nothing abnormal about the throat. There is a slight cough in many cases, with bronchial râles, signs of laryngeal catarrh, and abnormal sensations in the larynx and trachea. During the first few days the sensorium is clear as a rule, though delirium may occur in severe cases, and may be so intense as to endanger the life of the patient.

The skin in the first stage of typhus icterodes is usually dry, but sometimes there is slight sweat, which does not affect the condition of the patient. The urine is changed in quantity and quality not only in different cases, but even in the same stage in individual cases. Not infrequently it contains albumin. In many cases there is strangury, dysuria, or complete suppression, lasting for a longer or shorter time, and often uræmia, eventually causing death.

On the third or fourth day there occurs marked remission of the fever, or often complete absence of fever, beginning in the evening and lasting through the night. This marks the beginning of the second stage: the patient feels better, sleeps a few hours, his whole appearance is changed, the face becomes pale, the redness of the eyes diminishes, the pulse falls to 90 or 100, is softer and weaker, and the nervous symptoms moderate, but do not disappear, though in some cases they become more intense, and others appear. Icterus appears in the second stage, on the fifth or sixth

day. At first the conjunctiva becomes yellowish, and soon after this the whole cutaneous surface takes on a golden-yellow, orange-yellow, or greenish-yellow appearance. The urine also becomes yellowish, and contains bile pigment. A very frequent symptom of the second stage is copious epistaxis, often difficult to control, and recurring. Another constant symptom is a generally strong and regular, though sometimes irregular pause of the pulse every 5, 6, or 7 beats, which occurs a short time before the appearance of the icterus. After from a few hours to two days this irregularity may disappear, initiating a favorable third stage, or it may continue for a longer time, marking a severe third stage, which may end fatally.

There are hæmorrhagic cases, in which bleeding takes place from different organs: the stools and urine are bloody, and vibices, petechiæ and blood-effusions appear in the skin.

In mild cases there is a remission of all the symptoms after the appearance of icterus, and convalescence is established by the seventh or ninth day. In severe cases, on the contrary, death may occur early, before icterus has fully appeared, or during its appearance. In such cases the severe symptoms remain unchanged, or become more severe, the pupils dilate, delirium and coma supervene, and collapse and uræmia end the scene. In still another class of cases the disease is more prolonged, and the fever again rises after the remission, and a typhoid stage comes on, of varying intensity according to the severity and duration of the morbid process. In this stage all the symptoms are very similar to those of typhoid.

Such is the general symptomatology of this peculiar disease, which may possibly become in the future more than a curiosity to American physicians.

THE RELATION OF DIABETES TO HEART DISEASE.

Diseases of the circulatory apparatus, and especially of the heart, occupy but a comparatively small space in the literature of diabetes, either clinical or anatomical. JACQUES MAYER, of Carlsbad, attributes this partly to the fact that in searching for the pathogenesis of diabetes, pathologists have given most attention to the organs

supposed to be directly concerned in the production of the disease. Seegen, in his work on diabetes, in which he published 140 cases, has but little to say of the symptomatic and physical relations of the heart and blood-vessels. In 11 cases only is the condition of the heart mentioned; in 6 cases it was normal, there was hypertrophy of the right heart, a feeling of agitation or palpitation in the cardiac region, disposition to angina pectoris, slight mitral insufficiency, and a systolic murmur of the left heart, in one case each. In his anatomical considerations of diabetes there is but little material, drawn chiefly from Rokitansky's 30 cases. Cantani's lectures on diabetes are as meagre of information concerning the state of the heart and vessels as is Seegen's book.

Senator mentions more specifically the state of the circulatory organs in diabetes, and says that there are no striking or characteristic symptoms on the part of the heart and vessels in this disease; that the arteries are often atheromatous, but not exceptionally often. English authors have mentioned the atrophy and fatty state of the heart-muscle, and Donkin mentions that in consequence of the faulty propulsive power of the heart there is dropsy, or sudden death from syncope; that there is usually marked atrophy of the muscular system, with small and frequent pulse. R. Schmitz called attention some years ago to a complex of symptoms in advanced cases of diabetes, consisting of shortness of breath, a not infrequently suddenly appearing anorexia, vertigo, somnolence, and tendency to syncope, which symptoms he attributed to relaxation and fatty degeneration of the heart. In 80 out of 109 cases Schmitz noted soft and small pulse, sometimes accelerated, again very slow. cardiac impulse weak at all times, scarcely perceptible, and cardiac and vascular tone weak and very indistinct. Leyden called attention to asthma in diabetes as being of the type of cardiac asthma, though he attributed the attacks to physical disturbances.

Lecorché published a few years ago 14 cases of diabetic endocarditis—endocarditis complicating subacute and chronic diabetes, the symptoms of the endocarditis being the usual symptoms of this affection. He attributed it to the action of the saccharinized blood upon the endocardium. Vergely asserted, in 1883, his belief in a relation between angina pectoris and diabetes, and published four cases of diabetes in which there was

angina pectoris, even in the first stage of the diabetes, but in which there was no other cardiac disease than the angina. Frerichs seems to find no particular relation between diabetes and heart disease except the cardiac weakness in diabetic coma. Purdy, however, called attention some time ago to the presence of high arterial tension in diabetes.

The latest contribution to the subject of the relation of diabetes to cardiac disease is a paper by J. Mayer, in *Zeitschrift für klinische Medizin*, Bd. 14, Hft. 3. Mayer has, on account of his residence at Carlsbad, exceptional opportunities for studying diabetes in all its phases, and with all its complications. The present paper is based on a study of 380 cases of diabetes, 266 males, and 114 females, 65.26 per cent. being between the ages of 40 and 60 years. Of the 380 cases, 337 were in the first stage of diabetes, and 47 in the second stage; of the latter 26 were under observation during both stages. His cases show that increased cardiac volume, whether from hypertrophy or dilatation, is much more frequent in diabetes than one would suppose from consulting literature, it having been found, without other anatomical lesion, in 82 of the 380 cases, showing that cardiac enlargement in diabetes is not a mere coincidence. There can be but little doubt that this enlargement is due to the chemical irritation of the pathological blood—irritation caused by sugar and urea, by glycæmia and azotæmia.

The fact of the increased amount of urea excreted by diabetics is too well known to require more than mention, as is the fact that the blood of diabetics contains from .65 to .8 per cent. more sugar than normal blood. So also in regard to the injurious action of polyuria, glycosuria, and azoturia on the kidneys. The experiments of Grawitz and O. Israel in regard to the relation between renal disease and cardiac hypertrophy (*Virchow's Archiv*, Bd. 77, S. 315), and Israel's work on the relations between renal disease and secondary dangers of the circulatory system (*Virchow's Archiv*, Bd. 86, S. 299) have an important bearing on the subject discussed by Mayer, as showing that cardiac hypertrophy is caused when there is an excess of waste material in the organism, and which must be excreted. The healthy kidney can meet large demands upon it, but in diseased conditions—sooner or later according to the individual—insufficiency will result, leading

to increased activity of the heart, and then to cardiac hypertrophy.

O. Israel, during his service at the Berlin Charité, found that of the cases that died of diabetes 10 per cent. had cardiac enlargement, without valvular or arterial lesions, or renal disease. Mayer has examined Virchow's necropsy reports (1856-1887), and among the 69 cases with the diagnosis "diabetes mellitus," the heart was enlarged in 9 cases, exclusive of those in which there was enlargement from anatomical cause (vascular, valvular, or renal disease). This gives a percentage of 13, while Mayer's 380 cases show 21.6 per cent. In a number of other cases there was hypertrophy with chronic endoarteritis, while in some cases endoarteritis and hypertrophy were primary. There seems to be no question, or but little, that the arterio-sclerosis, the vascular dilatation, Gull and Sutton's arterio-capillary fibrosis, and Ewald's muscular hypertrophy of the small arteries, seen in renal affections, are the secondary results of cardiac hypertrophy, all being due, directly or remotely, to the pathological chemical composition of the blood. The cardiac lesions in diabetes, fatty metamorphosis, fatty infiltration, brown atrophy, hypertrophy, dilatation, and other anatomical changes seen in diabetes, are referable to the demands made upon the heart by the diabetic blood; and the sooner general nutrition suffers, the sooner urea and sugar formation exceed the individual limit, the sooner is there an attempt at some sort of compensation.

As regards the influence of these facts on the therapeutics of diabetes, it is evident that everything must be forbidden that can injuriously affect the kidneys and heart, since organs whose work is too great are easily affected by disease. The frequency of valvular lesions in nephritic patients, and of renal lesions in diabetes, is well known. In the 66 cases from the Berlin Pathological Institute, Mayer found 30 of renal disease, and its frequent occurrence in diabetes was asserted by Stokvis at the Congress für innere Medizin in 1886. In his 380 observations Mayer observed it in 64, though infrequently in the form of contracted kidney. The heart and kidneys, he says, must be spared by a suitable diet; nitrogenous food must be limited, and he has of late years used milk to a large extent, and can confirm the favorable opinion of Hoffmann on this subject, expressed at the Congress für innere Medizin.

THE DANIEL A. JONES HOSPITAL.

The corner-stone of the Jones memorial wing of the Presbyterian Hospital was laid last week, the present building being far too small for the demands upon it. The Board of Directors accepted the munificent gift of \$100,000 from the estate of Daniel A. Jones and added to it by subscription over \$50,000. The building now in process of construction will, when completed, be the finest west of New York City. The building will be six stories in height, with an imposing front, surmounted by a 150-foot tower, finished in red brick, with terra-cotta and stone trimmings. It will be absolutely fire-proof, with a perfect system of ventilation, and a capacity of 250 patients. Rev. Dr. Barrows delivered an address on "Christian Charities," in which he said that Mr. Daniel A. Jones was a man most deeply touched by human suffering, and had chosen a sublime monument to perpetuate his memory. Dr. Barrows considered it a propitious omen that the rich were obeying the injunction of Him who was the poor man's physician. At the close of this address Miss Ruth Jones, the little grand-daughter of Daniel Jones, stepped forward and deposited beneath the suspended stone a box containing the records of the hospital and other mementoes of the occasion. The massive stone was lowered and adjusted, after which the little girl gave it three raps with a mallet and said: "The corner-stone of the Presbyterian Hospital is now laid." Appropriate speeches followed by Charles L. Hutchinson, Esq., President of the Board of Trade, Dr. Woolsey Stryker of the Fourth Presbyterian Church, Dr. Breed of the Church of the Covenant, Dr. Withrow of the Third Presbyterian Church, and Mr. D. K. Pearsons.

In his address Mr. Hutchinson said: "We are gathered here in the name of the Great Physician to set the stone which shall be as the corner of the temple dedicated to the service of God. What grander temple could Daniel A. Jones build, what loftier monument could he raise to perpetuate his memory? Hard, indeed, it is in this day and generation to heed the Word of the Master: 'Lay not up for yourselves treasures on earth.' The temptations are so many and so great; the world has so much to offer; the heart finds such delight in things temporal. But how much better for themselves, their children, and their fellow-men, if now in their life-time they should begin

to follow the example set by Daniel A. Jones, or the grand example set by one now on the platform, a near and dear friend of his—Mr. D. K. Pearsons. Better far to spend one-half of an ample fortune and leave a heritage of good and generous deeds and a beloved name to your posterity than to die with all the wealth of the Indies. There is much need in Chicago to-day of more devotion to the higher interests of life, to education, philanthropies, and humanities."

It is thought that the building will be completed some time in November.

TYMPANITES AND TYMPANITIS.

The indiscriminate use of these words for meteorism or flatulent distension of the intestines is exceedingly common—so common, in fact, that if usage can justify a continuation and sanction of error in the use of words, it may be assumed that it is proper to commit this error. But there is a limit to the justification of error by usage, and the error mentioned is beyond that limit. Tympanites cannot mean inflammation of the lining membrane of the middle ear; tympanitis can mean nothing else. The termination *itis* of the latter word shows that it means an inflammation. Tympanites is a Latin derivative directly from the Greek, and of the fifth declension. Tympanitis is derived from the Greek root *τύμπαν*, a drum, to which is suffixed *itis*, signifying that a drum (the tympanum) is inflamed. Tympanites signifies a condition of the intestines giving them a drum-like tension and sound. Lexicographers, medical and general have confused the two words, and it is not strange that medical writers have been confused by them. But it is perfectly clear that the words are not synonymous. There is already more than enough confusion of medical terms: Let us at least make correct use of the words whose meaning cannot be mistaken except by inattention.

THE BILL TO PERFECT QUARANTINE.

On July 5 the House Committee on Commerce reported favorably the bill recently passed by the Senate perfecting the quarantine service. It provides punishment for any person trespassing upon any grounds belonging to any quarantine reservation or for any master, pilot or owner of a vessel

entering any port of the United States in violation of the law aiming to prevent the introduction of contagious or infectious diseases into the United States. It also establishes quarantine stations at the following named places: At the mouth of Delaware Bay, near Cape Charles, at the entrance of Chesapeake Bay, at Key West, in San Diego harbor, in San Francisco harbor, and at or near Port Townsend, Puget Sound. The bill appropriates \$542,000 for the construction and maintenance of the above stations and for the maintenance of the gulf quarantine (formerly Ship Island) \$15,000. In its report the committee says it cannot too earnestly urge upon Congress the necessity of making ample provision for this important service. Heretofore it has been the custom to wait until an epidemic became flagrant in this country and then to make an appropriation in spasmodic haste, to be expended by the President in preventing its spread at an enormous cost, when a judicious and timely expenditure of a small sum would have prevented its original introduction.

EDITORIAL NOTES.

THE NEW YORK ACADEMY OF MEDICINE has received nearly \$12,000 in subscriptions to its building fund.

A CLINICAL SCHOOL AT DETROIT.—The matter of establishing a clinical school in Detroit as a department of the University of Michigan, which has long agitated the people of the State, has finally taken definite form and will doubtless soon be realized. The new movement is to raise \$200,000, to be placed in the hands of the regents to be used for the establishment of such a clinical department. Moses W. Field promises \$20,000, Gen. Alger \$10,000, and six others amounts swelling the total to \$60,000 already.

THE COMMEMORATIVE MEDALS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS subscribed for by foreign members have been forwarded to them through the State Department.

We learn from Dr. J. M. Toner, Washington, D. C., who has charge of the medals, that up to this time only about one-half of the medals subscribed for by home members have been applied for. He would be pleased if those that have paid for their medal would direct him how and where to deliver it. A paragraph to this effect was published in THE JOURNAL more than six months ago.

SOCIETY PROCEEDINGS.

GYNÆCOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, April 20, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

THE PRESIDENT exhibited a

UTERUS REMOVED PER VAGINAM FOR FIBROIDS.

It was about double the normal size. The fibroids had produced incurable stenosis, and were accompanied by almost constant pain of increasing severity. The patient was 42 years old, and has had four children, the youngest 20 years old. She is obliged to wash for a living, has been getting worse for two years, and during the past year has had to stop work every two or three days on account of suffering referred to the pelvis. She has been under treatment by prominent gynecologists, both for the stenosis and for the fibroid tumors, without avail. As nothing short of a severe cutting operation would have relieved the stenosis, it was thought that vaginal hysterectomy would be but little less dangerous, and would give permanent and complete relief instead of temporary and partial. It would remove the tumors with but little danger and thus forestall a possible abdominal hysterectomy or supra-vaginal amputation with the terrors so often connected with them. The whole uterus was enlarged and hardened and the cervix would form a bad stump in case of such amputation. Two of the tumors were near the serous surface, and one just under the mucous membrane. The stenosis extended half an inch above and a little below the internal os, and is of cicatricial hardness. The tumors were each about the size of a hickory nut. The patient did not have a bad symptom after the operation. The ovaries were not removed, as they were not diseased and were undergoing senile atrophy.

DR. J. H. ETHERIDGE reported a

CASE OF CÆSAREAN SECTION.

The operation was performed on February 21st. The whole pelvis was blocked up by a fluctuating tumor containing a hard substance. The index finger could pass up between the symphysis pubis and the tumor, which seemed to be in the posterior part of the pelvis. I could pass one finger easily, but I could not get two in, and with the utmost pressure of my hand upwards I could not reach the cervix. The patient was a young Irishwoman, 32 years of age, of a nervous temperament, and had borne three children. The first labor was normal. The second labor was terminated by instrumental delivery with some difficulty, and the third one, two and a half years

ago, was accomplished with the greatest difficulty with forceps. There was an obstruction to delivery found at that time, but what it was was not determined. I could not determine what the fluctuating tumor was, and the idea of puncturing it occurred to me upon my first examination, but fearing that I would open a pus cavity that would discharge its contents during the lying-in period, I was deterred from doing it. The patient was taken to the Presbyterian Hospital. The attending physician went with her in a carriage and administered chloroform *in transitu*. About half-past four she was etherized and the initial incision made from above the umbilicus, perhaps an inch and a half, down to the probable location of the reflexion of the peritoneum upon the uterus. The abdomen was very large, and in making the first incision the edge of the scalpel went through the abdominal wall and into the uterus itself. I supposed I was making a cutaneous incision, but the wall was so thin that the knife went through into the uterus. The steps of the operation after that were very simple. The incision was enlarged to about six inches, perhaps seven. The amniotic sac was not broken, and two or three sweeps of the knife carried it through the uterine wall and into the bag of waters, and there was a tremendous welling up, the water flowing out over the patient, the table, and everything else. Dr. Parkes was my vis-à-vis, and he immediately pressed the uterus laterally with the view of forcing the child up through the opening, and it came up breach first. There was no attempt of the uterus to contract. The child was easily taken out in a second of time, and two snap forceps put upon the cord, which was divided and the child given to the nurse. There was very copious hæmorrhage, though not alarming; the walls on both sides seemed to be springs of blood. The contraction of the uterus was secured by the pressure over both sides, no attempt being made to turn the uterus out of the cavity. The placenta was easily secured; the peeling off of the whole of it from the inside of the uterus was speedily and easily and cleanly accomplished. Uterine contractions failed to follow immediately. A hypodermic injection of ergot was given and snap forceps put on bleeding vessels until the hæmorrhage was controlled. The uterus was manipulated and pinched and every effort made to invite nature to set up contraction, which, after a space of seven or eight minutes, came on, feebly, not vigorously.

After the uterus was thoroughly emptied, I passed my hand down into the cervix to see if it was patulous, and I found all four of my fingers could go through easily up to the second joint, showing that there would be an outlet for the lochial flow. The appearance of blood at the vulva indicated that drainage from the uterus would be all that could be desired.

The closure of the uterus was accomplished by three rows of sutures; the first one, which brought together the mucous membrane, was made with a carbolized silk ligature. A larger ligature was used for the muscularis. A fine silk suture was used for the peritoneal covering of the uterus. In the mean time the uterus was contracting very steadily indeed, and the hemorrhage was well under control, so that by the time the muscular wall was brought together it was a dry wound. The abdominal wall was closed in the ordinary way with interrupted sutures and the patient was put to bed with stimulants and hot applications, and she reacted very well indeed. She ran along for twenty-four hours very well without any particular rise of temperature, but in the second twenty-four hours there was a gradual coming up of the temperature and peritonitis set in. I wished to take advantage of cathartics and get her bowels open, but every effort that was made to physic her, in the second twenty-four hours, was entirely futile. Injections by the rectum were attempted, but the pressure upon the rectum prevented the introduction beyond the sphincter ani of a rectal tube; in the meantime the temperature was going up and the patient getting weaker. Then it was decided to open the fluctuating tumor in the pelvis and see what it was. The patient was chloroformed and placed in the extreme lithotomy position. The posterior vaginal wall was found to be extremely blue. The Cæsarean section was performed about four o'clock in the afternoon, and this operation was done near the close of the third twenty-four hours afterwards, viz., about two o'clock. An incision was made in this bulging mass and the pus welled out in great quantities, amounting to about half-a-gallon. Upon introducing the index finger into the abscess cavity, a dermoid cyst was detected, the hair being easily detectable. The patient was put to bed after a thorough evacuation of the pus, but she never rallied from the shock of the operation and died in twelve hours.

It occurred to me, on first examining her, that this could not be an accumulation of ascitic fluid and that it must be pus. From the history of the case and the deduction that was speedily made, the decision was reached that abdominal section should be made and the child removed in that way, because in the examination one could feel up in the vagina, with the finger, a hard mass of something below the promontory of the sacrum that appeared to me would render it impossible to introduce forceps and to drag the child through; and if it was filled with pus, I was certain the woman would die of infection.

DR. W. W. JAGGARD read a paper entitled
A CASE OF CONSERVATIVE CÆSAREAN SECTION
UNDER THE RELATIVE INDICATION, WITH
TERMINATION IN RECOVERY.

Case.—Mrs. E. S., 36 years old, born in Rhenish

Prussia, married in the United States shortly after immigration. She had been a sickly child, unable to walk until her 7th year, on account of *Doppelglieder*, i.e., rachitis. During infancy, she suffered from tuberculosis of the cervical glands, two depressed cicatrices being visible on the left side of the neck at the time of examination. Since her 7th year, she has enjoyed robust health.

First pregnancy: patient's first child was delivered May 13, 1882. Shoulder presentation, right scapula anterior position. Difficult delivery by version, decapitation, and extraction. Puerperium normal.

Second pregnancy, delivery June 20, 1883. Same presentation and position as in first pregnancy. Prolapsus of funis. Delivery by version, extraction, and forceps to the after-coming head. Septicæmia, puerperium six weeks.

Third pregnancy, induction of premature labor at the end of the seventh lunar month. Same presentation and position as before. Delivery by version and extraction. Child survived the difficult operation a few hours. Puerperium normal.

Fifth pregnancy, beginning of last menstruation June 1, 1887. *Status præsens*: The patient of strong frame, and well-developed muscles, is four feet seven inches in height, and 135 pounds in weight. Pregnant; near term; distance from ensiform cartilage to pubis 45 cm. ($17\frac{1}{2}$ inches); from ensiform cartilage to umbilicus, 22 cm. ($8\frac{3}{4}$ inches); circumference around umbilicus, 87 cm. (34 inches). Shoulder presentation, right scapula anterior position.

Pelvic Measurements.

| | |
|---|-------------------------------|
| Distance between anterior-superior spinous processes, | 27 cm. ($10\frac{1}{2}$ in.) |
| Distance between iliac crests | 27 cm. ($10\frac{1}{2}$ in.) |
| External conjugate diameter (Baudelocque), - - | 14 cm. ($5\frac{1}{2}$ in.) |
| Distance from sacro-coccygeal joint to sub-pubic ligament (A. G. E. Briesky), - | 9 cm. ($3\frac{1}{2}$ in.) |
| Distance between the great trochanters, - - - | 30 cm. (11.7 in.) |
| Pelvic circumference (Kiwisch) | 85 cm. ($33\frac{1}{4}$ in.) |
| Diagonal conjugate diameter | 7.5 cm. (2.9 in.) |
| True conjugate diameter (estimated), - - - | 5.5 cm. (2.14 in.) |

Diagnosis.—Simple, flat rachitic pelvis, with so-called absolute contraction of the true conjugate diameter. Apart from the pelvis, the osseous system showed no marked signs of rachitis. There was no abnormal spinal curvature, antero-posterior or lateral, and the long bones were perfectly straight.

Indication for Operation.—Notwithstanding the fact that the pelvis was a typical example of the so-called absolutely contracted simple, flat, rachitic class, the history of former deliveries demonstrated plainly that the obstacle to the

escape of the child through the natural passages was only relative, and not at all insurmountable. Both parents were undersized, with relatively small heads, and the children were of a size less than is common. Moreover, the after-coming head was invariably made to present, and the accommodation of the passenger to the passages was thus greatly facilitated. The case was clearly one in which the woman could be delivered with safety, in all probability, by version, extraction, and craniotomy. On the other hand, the child was living, and Cæsarean section offered the possibility of saving both mother and child, although, of course, with enormously increased material risk. The question of the induction of premature labor, so late in pregnancy, was not considered for obvious reasons. In a word, the relative indication for Cæsarean section was presented.

A plain, unvarnished statement of all the facts in the case was made to the patient. After a week's deliberation, she elected the Cæsarean operation. In reaching this conclusion, she was assisted by the Roman Catholic priest of the parish, who remarked that the pregnant woman was the aggressor; that she had made the contract of maternity; the child was passive, and had made no contract. In strict equity, entirely apart from ecclesiastical considerations, the child's claim to life should be considered at least equally with those of the mother.

Operation.—The patient at once entered Mercy Hospital. The urine was examined, and found to be normal. The only preparatory treatment consisted in a daily bath, in tepid water, with the liberal use of soap, that the woman's mode of life before admission rendered necessary.

In the selection of the time for operation, I had determined to choose the latest possible moment before labor actually began. From the usual data—date of last menstruation, size and position of the uterus, abdominal measurements, length of the child measured by calipers (Ahlfeld), estimate of the size and weight of the child by palpation (Carl Braun)—it was possible in this case to make only a probable diagnosis of the time of gestation. I concluded that the woman was in the last fortnight of pregnancy.

Early Tuesday morning, March 6, 1888, the patient informed me that she would certainly fall in labor within the next twenty-four hours. She based her prediction upon dull pain referable to the lumbar and sacral regions, and beginning painful uterine contractions. She had been enabled to fortell her other confinements by similar sensations, and I was inclined to attach considerable importance in this case to subjective signs. The only objective symptom indicative of impending labor was a slight increase in the force and frequency of the intermittent uterine contractions. All pre-arrangements were taken with respect

to the most thorough cleanliness and disinfection of the operator, assistants, patient, instruments, and environment. The woman was in excellent condition; cheerful; pulse and temperature normal.

The steps in the operation were: After evacuation of the bladder, incision through the linea alba, from the navel to a short distance above the pubes, as low down as was safe, on account of the bladder. The diastasis of the recti muscles was well marked, and the peritoneum was incised without dividing much muscular tissue. No omentum nor intestines presented between the uterus and anterior abdominal wall.

The median line of the uterus coincided with the incision, and the usual manipulation to correct lateral version and axial rotation was unnecessary. Before making the uterine incision, Dr. Holmes placed one hand on either side of the cut, and rendered the abdominal parietes tense enough to prevent the access of fluid to the peritoneal cavity. I incised the anterior uterine wall in the median line at a point a short distance above the os internum with a scalpel, and rapidly enlarged the cut in the direction of the fundus, to the extent of 13 cm. (5 inches) with a blunt-pointed bistoury. The thickness of the uterine wall was about 1 cm.

The placenta was implanted over the line of incision, and the first gush of blood was frightful. The after-birth was quickly separated by the hand, the amnion ruptured, the child caught by the feet, turned, and delivered without laceration of the wound. The child uttered a lusty cry upon its liberation from the *cavum uteri*. I had requested an assistant to insert his index fingers into the upper and lower angles of the uterine incision, and bring them up close to the abdominal cut as an additional precaution against the escape of fluid into the peritoneal cavity. In the hurry of the operation, this request was forgotten. After, or, rather during the evacuation of the uterus, Dr. Holmes pressed this organ through the abdominal incision, by his hands applied on either side, while Dr. Riese brought the edges of the abdominal cut together behind the uterus, and effectually prevented all intestinal protrusion. The lower uterine segment, after this eventration, was firmly compressed by Dr. Holmes with the thumbs and index fingers of both hands, while the corpus uteri was enveloped in hot sterilized gauze compresses. Squibb's aqueous extract of ergot was exhibited hypodermically after the evacuation of the *cavum uteri*.

Hæmorrhage was trifling after the contraction and retraction of the uterine musculature, following the escape of the foetus and envelopes, and was now fully controlled by digital compression. The elastic ligature was not used in the operation.

Twenty-one deep uterine sutures were inserted, including all the tissues down to the mucosa.

For the introduction of these sutures, I used the long slender laparotomy needle of Thomas Keith. This needle passes with remarkable ease through the thick uterine wall, making a very small puncture, that is completely filled up with the suture material—in this case silk. After passing a finger through the canal of the cervix from above downward, the uterine cavity was irrigated with a 5 per cent. solution of carbolic acid, a bacillum containing 90 grains of iodoform placed within, and the wound closed. Union of the peritoneum over the line of incision was effected by a continuous silk suture. When the two rows of sutures had been drawn taut, the uterine wound was accurately closed, and perfectly dry. The uterus, in a state of normal retraction, was returned to the cavity of the abdomen. The toilet of the peritoneum was brief, as no fluid had escaped into the abdominal cavity, and the intestines had not at any time protruded. The abdominal incision was closed with interrupted silk sutures.

The duration of the operation was about one and one-quarter hours. From the extraordinarily simple *technique*, it would seem that the operation had been needlessly prolonged. But the uterine sutures were inserted deliberately and with care; then, too, time was occupied in securing uterine retraction by the application of hot compresses. The total amount of blood lost was not great—scarcely more than the average loss in normal labors. The chief element of danger lay in the suddenness of the loss, but no indication arose for the employment of transfusion, the apparatus for which was in readiness.

The shock from the operation was profound, but brief. The patient fully reacted within three hours. Her convalescence was uninterrupted.

Examination, April 20th, revealed the uterus nearly normal in size in mobile anteflexion. The parametrium was free from any sign of infiltration, and no trace of the sutures in the anterior wall of the uterus can be felt upon careful bimanual exploration. The vaginal finger easily outlines the anterior aspect of the uterus. The uterus is situated relatively high up in the pelvic cavity, but can be readily made to descend below the place of the inlet by gentle pressure above the pubes. I suspect the presence of adhesions—they must be very slight, however—between the fundus and the anterior abdominal wall.

The child was a small, but perfectly formed, and apparently mature male; weight 3000 grams, length 49 cm. The infant thrived on artificial feeding until the sixteenth day, when, after exposure to cold, it died suddenly in a convulsion. The autopsy disclosed intense pulmonary congestion. Although the child was apparently well-nourished, it is not improbable that inanition was a predisposing factor.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Diphtheria by Balsamics—Diphtheria and Sepsis of the New-born—Bloomingdale Asylum to be removed.

The fourth annual meeting of the Fifth District Branch of the New York State Medical Association, which was held in Brooklyn, in the latter part of May, was a very successful and attractive one. Dr. Edwin Barnes, of Dutchess county, presided with dignity and grace, and his annual address was listened to with much interest. In its introductory portion he spoke of the prosperity and the work, past and future, of the Branch, and of the over-crowding of the profession and its prevention; after which he took up the subject of diphtheria and its treatment.

Just now, he said, the treatment by balsamics, such as turpentine, benzoic acid, cubebs, etc., seemed to be again coming into favor, and it was of this method that he wished to speak particularly; presenting the results of his own experience with it in three distinct epidemics, as well as in the isolated cases which, like every general practitioner, he had, from time to time, met with. He then went on to give a résumé of 141 cases of undoubted diphtheria; every one of them being characterized the false membrane in the throat, the enlarged cervical glands, the asthenic fever, and fœtor of the breath peculiar to the disease. All cases of simple membranous angina, follicular tonsillitis, or herpetic sore throat, he said, were rigidly excluded; but if, as was claimed by a very high authority, many of these were mild cases of true diphtheria, the total number of cases observed would be greatly increased, and the showing made for the treatment adopted far more favorable than approved in the results of these 141 cases.

The first of the epidemics referred to, commenced in the town of Hyde Park, Dutchess county, in the month of August, 1875, and from Hyde Park it spread into the adjoining towns of Clinton and Rhinebeck. The disease declined in the spring of 1876, but broke out afresh in the autumn of that year, subsiding again in the following spring. In the autumn of 1877, it re-appeared with unusual intensity, and after that gradually disappeared. The first patient that he treated in the epidemic of 1875, was an extremely self-willed and impulsive young lady who declined to take the classic mixture of tincture of chloride of iron and chloride of potassium, or to permit him to apply a spray to her throat. Without much confidence in its efficacy he then prescribed fluid extract of cubebs in syrup of tolu; but upon his next visit he was more than pleased with the change for the better that had taken place. The

throat had lost its dusky hue, the membrane was separating at the edges; the breath had lost much of its fœtor, and the pulse, as diminished in frequency, with increasing strength. She progressed rapidly to convalescence, and since that time Dr. Barnes said he had relied upon cubebs as the sheet anchor in his treatment of diphtheria.

Of the 141 cases cited, seventy-six were males and sixty-five females. The youngest was 6 months of age, and the oldest 33 years. Twelve were fatal, and in three of these the cases were far advanced and almost hopeless before the treatment was instituted. These three patients were all children in one family, and, the attending physician having himself contracted the disease, they were left without care and without medicine for three days; the parents being entirely destitute. In another case that resulted fatally, the diphtheria trouble was complicated with whooping-cough, and the patient died from hæmorrhage, brought on by the paroxysms of coughing. Three other children, aged respectively $2\frac{1}{2}$, 4 and 5 years, had syphilitic ozæna, which he regards as the most hopeless of complications, and no treatment proved of any avail when the disease had reached the nares.

In five of the fatal cases borax, lime-water, permanganate of potassium, sulphate of lime, and finally, persulphate of iron were perseveringly employed locally by means of the steam atomizer. In all of the fatal cases, death was by asthenia; none of the patients were asphyxiated, and he had never seen the disease inside the larynx when cubebs were given from the outset. The following was the treatment, which became almost a matter of routine, adopted by Dr. Barnes:

The patient was at once put to bed and kept there, and the following prescription ordered:

R Extract cubeb. fluid, - - - - $\frac{5}{8}$ iss
Syrup toluatan. - - - - q. s. ad. f $\frac{3}{4}$ iv
S. A teaspoonful every three hours.

This was alternated with a teaspoonful of a mixture, also given every three hours, consisting of a solution of three drams of citrate of iron and quinine in two ounces of water, with two ounces of syrup of tolu. These doses were for a child from 5 to 8 years. Stimulants were at first given freely in every case, but afterward only when the powers of life were evidently failing. An important part of the treatment was the use of as much nourishment as the patient could possibly be made to take. In one fatal case an immense blood-blister lined the fauces and was constantly swayed backward and forward with the movements of inspiration. The worst cases were those in which the membranes were of a dirty grayish or green color and sometimes almost black. The next worst form of membranes was that of a peculiar smooth, dead-white appearance, resembling a wax cast. Nearly all the fatal cases, as well as fully one-half of them which recovered, had diphtheritic coryza with the

characteristic discharge, at first thin and ichorous, excoriating the lip, and then sanious and accompanied with epistaxis. In one case, that of Dr. Barnes' own little daughter, after the membrane had disappeared from the throat, the disease crept upward from the nares, through the nasal duct and lachrymal sac, and extended to the palpebral conjunctiva. Her recovery, though slow, was complete.

Dr. Barnes went on to say that he did not wish to represent cubebs as a specific in diphtheria, but simply to show that in his experience it had stood the test of three successive epidemics of the disease, and always given excellent results. Much depended, he thought, on the mode of administration. Trousseau, Trélat and Robinson contended that the remedy should be given in powder; but the dose of powdered cubebs was so large that in the majority of cases it was very difficult to give, while in many it was entirely impossible, as the fine particles of powder would lodge in the throat and give rise to irritation and cough. It was also of the greatest importance that the drug should be pure and fresh, and he had little confidence in any fluid extract more than three months old. When a thoroughly good article was used, its effects were sometimes marvelous; the membrane being thrown off in from twenty-four to forty-eight hours, having a healthy granulating surface or a secondary membrane much less formidable in appearance than the first. In addition, the breath lost much of its fœtor, deglutition became more easy, and convalescence was soon established.

At the commencement of the epidemic he used the atomizer faithfully, running through almost the entire range of local applications recommended in diphtheria; but as the cases multiplied, it became impossible to carry out local treatment in many, and he found that patients living at a distance in whom this was not attempted did quite as well (if not better), as the others. This led him gradually to discontinue local treatment entirely, and a simple gargle of lemon-juice and water was generally all that was required in this direction. He regarded the inhalation of strong solutions as unadvisable, on account of the danger of their entering the larynx, trachea and bronchi, and thus doing an amount of harm that would counterbalance any good done by their application to the fauces. Again, the use of the probang was very apt to nauseate children, and if they were young and timid they would expend an amount of strength in struggling against such applications, which they could ill afford to lose. The membrane was not the disease itself, and it could only kill by acting mechanically, just as any other foreign substance would if present in sufficient quantity in the air-passages. It was an excreted substance, which had done its worst when its elements were in general circulation, and it was

powerless for further mischief, except as an obstruction. It would, of course, be best, he continued, to remove a mass of putrefying membrane that was blocking up the larynx and poisoning the breath if it could be taken away without disturbing the patient too much; but, as a rule, any measure that exhausted him was to be carefully avoided.

At the same session Dr. J. Lewis Smith presented a paper on "Diphtheria of the New-born and Sepsis of the New-born as observed in the New York Infant Asylum and New York Foundling Asylum," a portion of which he had already read before the Section on Pædiatrics of the Academy of Medicine. In the cases of five of the new-born which had come under his observation he stated that the infection usually entered the system through the umbilicus, and was usually microbic in character. There were, however, three classes of cases. The first were those in which an umbilical phlegmon had resulted from the umbilical ulceration, constituting the affection often designated as erysipelas by the older writers. In two such cases at the New York Infant Asylum diphtheritic deposits were also present. Both of these cases terminated fatally, but some of the others recovered. In this group of cases the infection was transmitted mainly through the lymphatics. The second class included those in which the poison was transmitted through the umbilical vessels, especially the vein, and the third class those which were infected by channels other than the umbilicus, such as the lungs, the skin, etc.

It had been observed by Trousseau, he said, that infantile erysipelas was most frequently seen in hospital wards in which puerperal fever was present, and in such cases as these would no doubt now be recognized as due to sepsis. Of five cases of diphtheria in new-born infants only one recovered, while more of the mothers had the disease.

In the course of the paper Dr. Smith referred to an epidemic which occurred in the New York Infant Asylum, and which seemed to be due to the poisonous atmosphere of the lying-in-wards of the hospital. An examination of the air by Drs. Prudden and Cheeseman revealed the presence of multitudes of disease germs, and it was a significant fact that even, after the wards had been thoroughly fumigated with sulphure (twice the quantity of sulphur recommended by the New York Board of Health, being employed for this purpose), numerous disease germs, could still be found and cultivated. The best plan of disinfecting such rooms and hospital wards, Dr. Smith believed to be by simply washing the floor, ceiling, furniture, etc., with solution of bichloride of mercury, and he also thought that during the progress of a case of diphtheria or other contagious diseases it was of service to keep a solution of car-

holic acid and other disinfectants constantly boiling, or at least simmering, in the sick-chamber. When such a plan was adopted the physicians and others in attendance were less likely to convey the contagion to others in their clothes than if no such precaution was adopted.

Dr. Smith having stated, in reply to a question from Dr. E. H. Squibb, that no water was employed at the time that the sulphur fumigation of the hospital wards was made, Dr. Squibb said that in using sulphur for this purpose the presence of moisture was always regarded as essential. It was sometimes advised that the walls and floor should be washed and left wet, but he thought it was much better that water should be kept boiling in the room at the same time that the sulphur was being burned. In this way a more complete oxidation of the sulphurous acid could be secured, and it was only in the nascent state that this, like the chlorine group and other similar agents, become effective as antiseptics.

At the afternoon session an interesting discussion on "Surgical Aid in the Treatment of Pulmonary Disease," took place.

It has been decided to remove the Bloomingdale Asylum (the insane department of the New York Hospital) to the vicinity of White Plains, Westchester County, where the Hospital Society owns a suitable tract of land. Streets will be cut through the Bloomingdale property, and the greater part of it will be sold in city lots, thus throwing open one of the finest districts for private residences on Manhattan Island; but the John C. Green memorial hall, the finest of the asylum buildings, will be allowed to remain, and will be converted into a general emergency hospital.

P. B. P.

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

The Massachusetts Medical Society: One Hundred and Seventh Anniversary.

(Concluded from Vol. X, p. 816.)

Membership in the Society—Physical Education in the Schools—Postural Treatment of Constipation—Surgery of Malignant Growths—Sublimate as a Disinfectant—The Annual Discourse.

Second Day—Wednesday, June 13.—President Gage opened this, the annual meeting, and the report of the proceedings of the last annual meeting was read. The Society now numbers 1,690 members. During the year 82 new members were admitted and 33 old members died. The finances of the Society were shown to be in a satisfactory condition.

The Society took an important step in concurring with the action of the Councillors in the repealing of a joint resolution, which has hitherto prevented even the presentation for examination

for admission to the Society of any person not a graduate of certain medical schools approved and recognized by the Society. Under the change, therapeutics is left out of consideration, and a graduate of any reputable school is at liberty to present himself to the Censors to show what he knows if he has renounced the doctrines disapproved by the Society.

An interesting report was submitted from the special committee appointed at the last annual meeting to investigate the subject of "Physical Education in the Schools." This was read by Dr. C. F. Withington. After showing what has been done by certain other cities in this direction, as well as how little has been done in Massachusetts, the report said that the matter of instruction in physical culture is one of great importance, and this will require the employment of persons who are qualified by study and experience to adapt the work to the needs of the pupils. There is no reason why the regular teachers in the schools cannot, after being instructed in the principles and practice of the science, carry on the work of their own classes under the oversight of a general supervisor of physical culture, in much the same way that some of the teaching of music in our schools is now carried on. This will make the expense of the movement, after the first, comparatively light. The report was adopted, and it was voted to send a copy to the State Board of Education.

Dr. E. T. Williams, of Roxbury, read a paper on "Postural Treatment of Constipation." The writer thought that constipation was frequently aggravated, if not caused, by a faulty and unnatural position at stool. Similar to labor, the act of defecation is chiefly the result of the action of the diaphragm and of the abdominal muscles. Contrast the action of the bowels of a man seated on a comfortable seat with his newspaper and cigar, and of a man in the woods away from all such conveniences. Compare the attitude of all animals in the act of defecation. The stooping position is correct. No seat at all would be best for men, and for women the use of the chamber would be good.

Dr. M. H. Richardson read a paper on "The Surgical Treatment of Malignant Growths," which he had very carefully prepared from a great many statistics. The earlier an operation is performed the safer it is, and then the operation should be most free for thorough removal. It is generally admitted that malignancy is local and not general. Lack of success is due to (a), insufficient excision of the growth; and (b), insufficient attention to the glands, lymphatics, etc. Enlarged glands generally contraindicate an operation, yet even then we may sometimes operate. The order of fatality is for operation for, 1, lymphosarcoma; 2, melanotic sarcoma; 3, sarcoma of tongue and tumors of; 4, testicle; 5, breast; 6, face; 7, hip;

8, neck; 9, jaw; 10, penis; and 11, extremities.

Dr. W. B. Hills, of Cambridge, read a paper on "The Value of Corrosive Sublimate as a practical Disinfectant." The author said that disinfection is now based on the presence of microorganisms, and hence disinfectants are only those substances which will destroy the vitality of the microorganisms. The hypochlorites are efficient on account of their oxidizing power, and this destroys other organic substances as well as the germs. Previous to 1880 corrosive sublimate had not been shown experimentally to possess the power. Koch says 1:5,000 aqueous solution will kill almost all germs, and 1:10,000 will destroy all of them. 1:1,000,000 restrains partially the growth of spores of the anthrax bacillus, and 1:300,000 absolutely restrains them. Corrosive sublimate is now at the head of the list of the disinfectants recommended by the Committee on Public Health. Its power, however, varies with the substances acted upon, being greatest for aqueous solutions and least for albuminous, since there is found an insoluble albuminate of mercury. It is true that some of the germs must be confined between the particles of this, but they are not destroyed and may become free again. Hence, for disinfection, corrosive sublimate must be used in excess, *i. e.*, allowance must be made for the chemical change. It is, moreover, destructive to lead pipes, and hence should not be disposed of through them. It may be used to wash woodwork, furniture, etc., and clothes not stained with excreta (which are albuminous), but it is absurd to use it for large quantities, *c. g.*, vaults, cesspools, etc. The excreta should be disinfected before going into the vaults. The dangers of poisoning are very slight; for the solutions are so dilute and the taste is bad. It is, however, risky if not dangerous to use so much in sprinkling the streets, which may rise again as dust.

In reply Dr. S. H. Durgin, Chairman of the Boston City Board of Health, said that only a light sprinkling of a dilute solution is used in the streets, and an hour or so later this is swept up and carried away. Hence it cannot get soaked into the ground, and the subsequent dangers are very slight, if they exist at all.

Delegates were then introduced from neighboring States, and at 12 o'clock, according to the usual custom, the hall doors were locked, and the *Annual Discourse* was given by Dr. B. Joy Jeffries, of Boston, who in brief said that: It is very generally agreed that the lawyer, the minister, the squire and the physician do not hold the same relation to the community as they formerly did. As that position was one of trust and confidence, we should study the causes that have broken it down, and correct it if possible. If the community judge the whole from a part, it is the duty of those faithfully striving not to have their labors misjudged and injured. For this there are many causes:

Formerly there was less diffusion of knowledge, and so, too, less diffusion of falsehood.

When the physician possessed more knowledge, more education than those about him, he was respected for these as he should have been; but now many have outstripped him, and the doctor finds his level given by his education and refinement. Good breeding and good education are not now, as formerly, the natural attributes of those legalized by a diploma. The public recognize that medicine is largely entered into as a trade or a business, and that many of its members hold degrees and diplomas purchased of the mills, legalized, it is true; but so are the dram-shop and the saloon legalized. But law is not justice. Medicine can only recover its former just position when the world is forced, by its existence, to recognize that to be a graduate of a good medical school means to have the education of our best universities in addition. The physician must be, can be and will be a man of science. As such, we can ally ourselves with the great body of men striving for knowledge and seeking truth. From the lack of this, a large part of our profession is not distinguishable from the man of business or trade.

Are we not bound in honor to do all in our power to bring up the standard of education and the standard of professional requirements in our calling? It would be a good thing for the world and our profession if nine-tenths of the medical colleges were swept away, and what was good in them gathered into a few great medical universities; placed where teaching and study could best be carried out. Must we recognize an uneducated man merely because he has a diploma? Shall we simply avail ourselves for gain of the laity's ignorance of the subjects we are familiar with, their passions, prejudices, superstitions and unfathomable credulity? There is no limit to human credulity in medicine, and hence it is easy to fool them, and hence is the secret of the success of quacks. Although legal to take this advantage, it is not justice.

We know all about the quack and pretender, licensed or unlicensed, and we simply assist in cheating the community, become *particeps criminis*, by in any way *seeming* even to recognize him professionally or socially. Next to honesty, true moral courage pays the best in the world in the long run. The tendency to compromise is dangerous, especially in this community.

The question of our social position is a delicate one. Our professional calling *should* render us the social equals of any. It has to contend with rank and title and office, and it speaks well for our calling that it has wrung even toleration from them. This it has done only by showing superiority in scientific attainment and hard work, in seeking and accumulating knowledge, which is power. Cultivation means refinement.

Our profession cannot contend with what is called business in the accumulation of wealth. Even with continued health and strength, and the largest possible amount of practice, a physician in this country can never acquire, by his toil exclusively, the incomes readily made in other occupations now recognized as professions. Our calling is most essentially not a trade, but belongs to that department of man's work known as scientific or knowledge-seeking. Now, the world over, men who give themselves up to the pursuit of knowledge have been considered as worthy of only so much of this world's goods as will simply keep them bodily in a condition to work with their brains and hands in science-seeking.

Never before have there been so many men so highly educated in medicine as now. I cite as proof the papers and discussions at our society meetings, the articles published in our journals, and the respect our best men are gaining from the thorough medical scholars and lecturers of England and the Continent. Never before have we had such competent and thoroughly taught practitioners under 30 years of age. Never before have we had so much true scientific work going on in our profession. Should these men be classed with the ill-bred and half-educated graduates of the remaining nine-tenths of the medical schools of this country? Yet this is precisely the way they are at present treated and regarded by the laity, who make no distinction between one physician and another. And this by all classes of the laity, high and low, rich and poor, learned and unlearned.

The elevation of the profession has been helped by the Massachusetts Medical Society by raising its standard of requirement. But are the best schools even yet doing *all* that is needed? The success and the growing number of the polyclinics and post-graduate courses seem to prove that the student and the graduate find that there is something more to be learned.

The more a man knows outside of his profession the better physician he will be. We learn to guide and govern men and women. The idea is erroneous that the physician cannot do anything else. But there is no place in medicine for the Bohemian or the dude. As dependency is the mother of invention, so it is the father of success. Only in the elevation of the standard of our profession can our calling be replaced in the respect of the laity, at the same time completely separating us in their judgment from the bands of quacks, trade doctors, *et id omne genus*.

A unanimous vote was passed by the Society giving thanks to Dr. Jeffries for his admirable address.

After the conclusion of the address the members of the Society, of whom over 800 were present, formed a procession in the order of seniority and marched to the Hotel Vendôme, where they

were received by Dr. Chas. B. Porter, anniversary chairman, and the President and President-elect of the Society, Gov. Ames, Rev. E. E. Hall, Rev. Phillips Brooks, Dr. Oliver Wendell Holmes, and other distinguished professors of Harvard, and then a buffet lunch completed the festivities of the day and the one hundred and seventh anniversary of the Massachusetts Medical Society. The next annual meeting will be held on the second Wednesday of June, 1889. N.

THE TRANSPLANTING OF A RABBIT'S CORNEA INTO THE HUMAN EYE.

Dear Sir:—I have just read the article published on June 16, on the above operation, and I wonder how it could get into *THE JOURNAL*; for its style is certainly better suited for the columns of a newspaper than a medical journal. And whoever wrote the article seems to know very little of the literature of this keratoplastic operation; if he knew more, he probably would not have been in a hurry to report Dr. Chisolm's case. He would know, 1, that during the past 40 years rabbit's cornea has been implanted into the human cornea so many times that there is nothing new or "wonderful" about it; and, 2, that in most cases, however, the transplanted piece gradually lost its transparency, and the vision of the patient was not permanently improved. But as the operation is done for the purpose of restoring sight, it certainly is ridiculously premature to report an operation as a success a few days after it was done, when it is still undecided whether or not the graft will remain transparent.

If those who imitate Prof. von Hippel's operation would only imitate also his patience and conscientiousness, and wait for the final results of their operations, their reports would be of more scientific value. For ten years Prof. von Hippel had been trying to find a method of preserving the transparency of the transplanted cornea, and at last he succeeded in two cases which he reported last year at the meeting of the German Ophthalmological Society. But to feel warranted in reporting the result as a lasting success, he had been watching the one case twenty-one months and the other case three months after the operation. He did not operate one week before the expected meeting and then hurry there to have the success of this "wonderful" operation heralded all over the country.

There is another thing that the reporter of Dr. Chisolm's case might learn from the German professor, to-wit, modesty and moderation in stating the possibilities of the operation. Hippel himself pronounced the usefulness of his operation in its present form to be very limited, because it was applicable to those cases only in which the opacity (leucoma) covered the cornea so far that

an iridectomy could not improve the sight, but where at the same time the opacity did not extend through the *entire* thickness of the cornea. But, he said, these conditions are very rarely found; and by far the larger majority of cases in which we should like to employ corneal grafting, are *total leucomata*, where the *whole* thickness of the cornea has been transformed into opaque, cicatricial tissue; and besides in most of these cases the iris is adherent to the posterior surface of the leucoma. *In all these cases it is evident the most successful grafting, with perfect preservation of transparency of the transplanted piece, could not restore any sight on account of the posterior layer of opaque corneal tissue (which is not removed by the operation) and the adherent iris.*

Our anonymous writer, however, claims: "Even these restrictions, however, open this great blessing of restored sight to a large (sic!) class of persons heretofore considered hopelessly blind."

The contrast of these views needs no further comment; the one is the calm judgment of a man of experience and sober thought; the other is the result of inconsiderate haste.

Truly yours,

F. C. HOTZ, M.D.

Chicago, July 8, 1888.

MISCELLANEOUS.

A NEW DISINFECTING APPARATUS.—DR. G. VANOVERBECK DE MEYER, Professor of Hygiene in the University of Utrecht, thus describes a new disinfecting oven of his invention:

The oven consists of a metal boiler which is placed in a second, slightly larger metal boiler. The last mentioned is covered, except on its lower surface, with a non-heat-conducting material. The space between the two boilers is filled up to half the height with water. A large round opening is made at the top of the inside boiler, and in the bottom another, but much smaller opening. A metal pipe, bent at right angles, leads from the bottom hole, between the two bottom plates, to the exterior of the outer casing near its bottom. On the top of the outside boiler are pipe-holes, which can be closed by screw plugs, and are used for filling the apparatus with water, insertion of the thermometer, etc. An emptying tap, gauge and cleaning-hole are also, of course, provided. One of the four upright sides of this apparatus is occupied by a door, also with double walls, which swings on stout hinges, and is fastened with thumb-nuts or other similar fastening, a piece of suitable material being placed between the door and sides, so as to make the door tight. If the model apparatus, which (when half-filled) contains about 15 litres of water, is heated by an ordinary small gas-stove, steam will issue from the escape pipe in one hour and fifty-two minutes.

This simple machine has the following advantages: In the first place, the temperature of the inside boiler is so increased that no condensation of the steam can take place, the heat coming from the water itself, from which the steam for the disinfecting has to be generated.

In the second place, by introducing steam at the top of the apparatus and causing it to escape at the bottom, thus driving the steam in a downward direction, the advantage is obtained that the steam spreads itself in layers, and

thus regularly in all parts of the inside boiler, at the same time affording the atmospheric air, which is present in the pores and meshes of the goods to be disinfected, the opportunity to escape in the natural direction (dependent on the difference in specific gravity).

Thirdly, a very slight degree of pressure, equal to a heat of 101° to 102° C., exists in my oven, owing to its peculiar construction (the height of the boiling mass of water and the fixed proportion between the sizes of the openings for the entrance and escape of the steam). The existence and maintenance of this temperature are shown by a thermometer placed in the tube through which the steam escapes.

At my request commissioners were appointed by the various Dutch ministries, the latter having a great interest in obtaining good and, at the same time, cheap disinfecting ovens, and the result of these tests have also, both thermometrically and bacteriologically, always been favorable.—*The Sanitary News*, June 9, 1888.

THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—The preliminary meeting of this Association was held at the Palmer House, Chicago, Ill., on June 28, and was called to order by the Chairman of the Committee, Dr. C. B. Stemen, of Ft. Wayne, Ind., at 9:30 A.M., who said the principal object of the meeting was for permanent organization. The further and additional objects of the Association were to bring the surgeons of the different railroads together annually to develop this special and rapidly growing branch of surgery, to report cases, to relate experiences, to exchange views, and to discuss the best means and methods of treatment in railway injuries.

The meeting was very largely attended, nearly all the prominent railway surgeons of the country being in attendance. Sixty-three railroads were represented. The Association starts out with a membership of 600, and promises to be one of the most active surgical associations in the United States.

The Association elected the following officers for 1889:

President—Dr. J. W. Jackson, Kansas City, Mo.

First Vice-President—Dr. J. H. Murphy, St. Paul, Minn.

Second Vice-President—Dr. J. B. Murdock, Pittsburg, Pa.

Third Vice-President—Dr. W. W. Ridenour, Massillon, Ohio.

Fourth Vice-President—Dr. B. L. Hovey, Rochester, N. Y.

Permanent Secretary—Dr. C. B. Stemen, Ft. Wayne, Ind.

Corresponding Secretary—Dr. E. R. Lewis, Kansas City, Mo.

Assistant Secretary—J. H. Trussel, Alliance, Ohio.

Treasurer—Dr. R. Harvey Reed, Mansfield, Ohio.

Next place of meeting St. Louis, Mo.

EDUCATED CORPUSCLES.—"The future of preventive medicine," said Prof. Ray Lankester in the fascinating lecture which he delivered at the London institution, "is the education of the white blood corpuscle." A corpuscle is a minute cell of protoplasm which floats in the human blood. This minute creature eats and lives and flourishes and dies almost like a human being. Its special function, said the lecturer, is to eat up the poisonous element which finds its way into the blood. When a wound heals it is because these indefatigable corpuscles have found their way to the sore and have eaten away the injured part. When bacteria gets into the system the duty of the corpuscles is to go for them and eat them up. If they succeed, the patient recovers. If they are out of appetite, or the bacteria too tough a morsel for them to attack, the patient dies. Sometimes, with unconscious heroism worthy of Marcus Curtius, they purify the bodies in which they live by eating up poisonous particles and then ejecting themselves, thus sacrificing their own lives. But such heroic self-immolation is not necessary if you educate your corpuscle. His education proceeds by inocula-

tion. By accustoming your protoplasmic cell to a low diet of mildly poisonous matter, such as the vaccine lymph, it becomes acclimatized, as it were, and is strong enough to eat up without inconvenience the germs of small-pox, which would otherwise prove fatal. It is these invaluable corpuscles, which enable confirmed arsenic eaters to swallow with impunity a dose sufficient to kill six ordinary men, and Prof. Lankester is of the opinion that they can be trained so as to digest the most virulent poisons and deal with a great number of diseases.—*Pall Mall Gazette*.

HEALTH IN MICHIGAN.—For the month of June, 1888, compared with the preceding month, the reports indicate that cholera morbus and diarrhoea increased, and that pneumonia, influenza, tonsillitis, bronchitis and erysipelas decreased in prevalence.

Compared with the preceding month the temperature in the month of June, 1888, was much higher, the absolute humidity was considerably more, the relative humidity was more, the day ozone was the same, and the night ozone was less.

Compared with the average for the month of June in the nine years, 1879-1887, measles were more prevalent, and intermittent fever, remittent fever, diarrhoea, whooping-cough, tonsillitis, diphtheria and dysentery were less prevalent in June 1888.

For the month of June, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was slightly higher, the absolute humidity was slightly more, the relative humidity was the same, the day and night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of June, 1888, at 19 places, scarlet fever at 30 places, typhoid fever at 10 places, measles at 42 places, and small-pox at Detroit.

Reports from all sources show diphtheria reported at 4 places less, scarlet fever at 24 places less, typhoid fever at 4 places less, measles at 22 places less, and small-pox in the same number of places in the month of June, 1888, as in the preceding month.

LEGISLATION REGARDING POULTRY-SELLING.—The State Legislature of Massachusetts has enacted the following: 1. No poultry, except it be alive, shall be sold or exposed for sale until it has been properly dressed by the removal of the crop and entrails, when containing food. 2. Whoever knowingly sells or exposes for sale poultry contrary to the provisions of Sec. 1 of this Act, shall be punished by a fine of not less than five, nor more than fifty dollars for each offense. The Boards of Health in the several cities and towns shall cause the provisions of this Act to be enforced in their respective cities. It would have been better surely to have omitted the words, "when containing" in the first section. The entrails always contain either food or the excrete refuse of it, containing numberless microbes ready to set up putrefactive or diseased processes.—*Prophylactic*.

DEATH OF DR. A. Y. P. GARNETT.—DR. ALEXANDER YELVERTON PLYTON GARNETT, of Washington, ex-President of the American Medical Association, and for many years one of the most prominent members of the Association, died at Atlantic City, N. J., on Wednesday last. His admirable address before the Association at Cincinnati will be long remembered by those that heard it. Dr. Garnett was graduated from the University of Pennsylvania in 1841. His loss will be severely felt, not only in Washington City, but also by the whole profession. A sketch of his life will appear next week.

THE CONGRESS FOR THE STUDY OF TUBERCULOSIS, which meets in Paris on July 25-31, under the presidency of Professor Chauveau, promises to be a grand success. Delegates will attend from numerous French and foreign societies. From America delegates go from the Academy of Medicine of New York.

THE COLLEGE OF PHYSICIANS AND SURGEONS, of New York, will require hereafter examinations for admission. Henceforth the College Year will consist of a period of vacation, and a session of from eight to nine months, from October 1 to about June 15. The number of didactic lectures will not be absolutely increased. The course will be graded, and extend over three years. This, we believe, is largely due to the influence of the late Dr. C. R. Agnew.

DR. I. N. QUIMBY makes a formal, but we may say unnecessary, denial of the charges of a correspondent of the *Medical and Surgical Reporter* that his action on the Nominating Committee at Cincinnati was in obedience to his "being instructed by his delegation." It is scarcely to be supposed that any one believed the charge.

A TRAINING SCHOOL FOR MALE NURSES has been erected on the grounds of Bellevue Hospital by Mr. D. O. Mills, and presented to New York City.

THE WOMAN'S MEDICAL COLLEGE OF PHILADELPHIA will receive by bequest the scientific books and herbarium and dried plants of the late Dr. Rachel Bodley.

PROFESSOR HYRTL has endowed six scholarships in the Vienna School, to go to worthy students without means, without distinction of nationality or creed.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 30, 1888, to July 7, 1888.

Col. J. H. Baxter, Chief Medical Purveyor, will proceed to New York City on public business connected with the Medical Department, and on completion thereof will return to his station in Washington City. S. O. 150, A. G. O., June 29, 1888.

Major Edwin Bentley, Surgeon, retired from active service July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

Capt. Richard W. Johnson, Asst. Surgeon, designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y. (near New London, Conn.), on July 2, 1888, and to continue during the months of July, August and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Div. Atlantic, June 28, 1888.

First Lieut. Wm. D. Crosby, Asst. Surgeon, leave of absence extended one month. Par. 8, S. O. 151, A. G. O., June 30, 1888.

First Lieut. Paul Clendenin, Asst. Surgeon, leave of absence granted in S. O. 59, Dept. of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending July 7, 1888.

Surgeon A. M. Moore, ordered to naval station, New London.

P. A. Surgeon A. A. Austin, detached from "Gedney" and wait orders.

Asst. Surgeon Thomas Owens, detached from naval station, New London, and to coast survey Str. "Gedney."

Asst. Surgeon R. P. Crandall, detached from the U. S. S. "Saratoga," and to the U. S. S. "Galena."

Medical Director George Peck, placed on retired list 9th inst.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending June 30, 1888.

Surgeon John Vansant, granted leave of absence for ten days. June 25, 1888.

P. A. Surgeon F. W. Mead, granted leave of absence for thirty days. June 28, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 14, 1888.

No. 2.

ORIGINAL ARTICLES.

THE SURGICAL ADVANTAGES OF THE BURIED ANIMAL SUTURE, AND ITS ADAPTABILITY TO SPE- CIAL PURPOSES.

*Read in the Section on Surgery, at the Thirty-ninth Annual Meeting
of the American Medical Association, May, 1888.*

BY HENRY O. MARCY, M.D.,
OF BOSTON, MASS.

In the light of modern science old experiences and theories are to be viewed in a new way, and many facts are subject to an interpretation quite other than originally given. This is especially true in surgery in reference to the rôle of the suture. The introduction of antiseptic wound treatment has modified the use of the ligature and suture to a degree which renders possible results hitherto never attained.

A review of the principles of suturing necessarily involves a brief consideration of the ligature. Its application to arrest hæmorrhage seems so natural that it may be accepted as probable that it has been used from the earliest times of the race; certainly it was known to Hippocrates. Although frequent mention is made of the ligature by the earliest writers, it was considered a bold innovation when Ambrose Paré advocated the tying of vessels in amputations, and we can now understand why these teachings were received with so much doubt and later came near being rejected altogether. Even within our own times, it was applied in wounds which generally became septic, while the method of searing which it supplanted, by the very means used to prevent hæmorrhage, prevented, in large measure, septic poisoning.

In our own student days, the classic rule was to leave one end of the ligature of all large vessels long and, no matter how a wound was closed or dressed, this was to extend from the coapted parts. If several, they were supposed to serve a valuable purpose for drainage, and were intended to cause a sloughing of the constricted tissues and come away with them at the end, often, of many days or weeks.

Had Sir Joseph Lister done for the profession and the world no other service, his name should

be handed down the generations for his admirable researches upon the ligation of vessels in amputations and especially in continuity. Others had indeed preceded him in the use of animal ligatures with excellent results, but their true mission could not be observed, except in aseptic wounds. Having excluded the ferments, Mr. Lister demonstrated that repair quickly supervened in a normal way, that the ligature soon underwent cell infiltration and was not thrown off, as formerly supposed necessary, as a foreign body. When his pupil in 1870, I observed that he practiced tying arteries, cutting the ligature short and closing the wound. He published, as early as April, 1869, an article in the *Lancet*, from which I quote:

"Thus the dead but nutritious mass had served as a mould for the formation of new tissue, the growing elements of which had replaced the materials absorbed, so as to constitute a living solid of the same form. . . . The two pieces of catgut which had been tied around the vessel at the distal part had become, as it were, fused together into a single fleshy band, inseparably blended with the external coat of the artery. The knots were nowhere discernible, and the only indication of the end which had been left long, at the time of the operation, was the presence of a black speck (the original material contained dark mineral impurities) here and there upon a delicate thread of cellular tissue in connection with the vessel. The cardiac ligature was in like manner continuous in structure with the arterial wall. The short ends had disappeared, but the massive knot was represented by a soft, smooth lump which appeared at first homogeneous except that it was speckled with dark particles as above referred to. On section, however, I discovered, in the interior of the mass and lying close to the wall of the artery, a small residual portion of the original knot, of comparatively firm consistence, and with the threefold twisted character of the cord plainly visible. It was quite distinct from the living tissue, so that it could be readily picked out from its bed with a pair of needles. Here almost all the original tissue had been removed, but it had served as a mould for the development of new tissue which had taken its place, and which retained the form of the mould in which it had grown."

He describes the microscopic appearances as follows: "A bit of the residue of the peritoneal thread having been teased out with needles, in a drop of water presented, like a fresh piece of peritoneum, the wavy bundles of parallel fibres characteristic of perfectly developed fibrous tissue. Adhering to the surface of the remnant of the ligature was some soft opaque material, readily washed off with water, consisting of corpuscles of different forms, most of them caudate, or fibro-plastic, but some spherical, though not resembling those of pus; and, here and there, fragments of the original peritoneal tissue, affected more or less with interstitial cell development. At a short distance from the remains of the old thread, the fleshy material which had been formed at its expense proved to be a most beautiful example of fibro-plastic structure, the coarse fibres which mainly constituted it being composed of very large elongated cells, often containing several nuclei and presenting in their course branchings and thickenings of various forms. Here and there were some fibres more perfectly formed, and also cells of a more rudimentary character. Again, the band which had resulted from the organization of the two fine threads of catgut which, from the smallness of their bulk, had no doubt vanished early, having had longer time to perfect its structure, was a comparatively well developed form of fibrous tissue, consisting of coarse fibres rather than of elongated cells, being thus intermediate between the merely fibro-plastic material of more recent growth and the completed texture of the original thread."

These demonstrations were early verified by a number of competent observers, and yet, so far as I know, so strong was the influence of previous prejudices, methods, and teachings, that the rational deductions from such valuable investigations and experiments were not broadened and applied to sutures until, in my own experience, the result of an accident in 1871. In the case of a strangulated hernia, where the opening was very large, Dr. A. P. Clarke, of Cambridge, and I refreshed the ring and sewed it with catgut, in order to prevent the descent of omentum or intestine, because of cough produced by a severe bronchitis from which the patient was suffering at time of injury. We had no thought of cure. This, however, followed without any complication, and the patient remained without recurrence until her death, which occurred six years later.

A thoughtful observer could not help profiting from such an experience. I reviewed the interesting studies and observations of Mr. Lister, instituted a careful series of experiments on animals, and later accidentally had the satisfaction of verifying the same, histologically, on the human subject. Upon these facts and deductions as fundamental, I established the operation for the cure of hernia by aseptic suturing of the refreshed parts

in open wounds, and published the same in 1871, republishing with additional results in 1878 and 1881;² the priority of which, I believe, is not questioned by any, and this is the method now adopted by most operators in all countries.

The dissection is made as freely as required to secure intelligent operating. The sac, if at all large, is drawn down and its base sewed evenly across by a continuous double animal suture by a method which I devised years since and described as the shoemaker's stitch. This is easily effected by using a needle with the eye near the point, which is the only essential in the needle, although usually, for convenience, a long needle more or less curved is fixed in a handle. The needle, threaded, is introduced, unthreaded, threaded with the other end of the suture and then withdrawn, thus carrying with it through a single puncture the suture. In this way a stitch is made as a cobbler applies his thread from opposite ends through the same hole, and this is continued until the seam is complete, having only a single knot at the last stitch. The sac, if small, is returned thus sutured, if large, is cut off. Then, in a similar way, often using a needle of considerable curve, the refreshed structures of the ring are sewed together and, where there is sufficient tissue, a superficial layer is closed in the same manner, over this, and finally the skin. As I shall have occasion to show later, the skin also is advantageously coapted by a buried suture.

From this as a beginning, little by little, I have extended the application of buried suturing until I have treated wounds in nearly every part of the body by this method. First, very naturally, came the amputation of the breast and the coaptation of the deep structures. Here the stitch, as above described, admirably takes the place of the button suture, still generally used in heavy, thick flaps. It further serves as a hæmostatic in the careful coaptation of the parts and, by lessening the exudation, renders the use of drainage often unnecessary. Generally, even in large wounds, I do not use drainage, relying, in an *aseptic* wound, upon the easy absorption of any slight effusion. Of course, in such coaptation, where fixation and rest are required for only a brief space, a small aseptic animal suture is quite sufficient, and may be applied by any needle in varying stitch. However, I quite prefer the double suture as above described, because of the accuracy of adjustment and evenness of strain on the parts involved. In 1881, I first applied this method of suturing to the stump of the uterus in hysterectomy, and thereby was enabled to demonstrate the intraperitoneal treatment of the stump without danger of sloughing or hæmorrhage. About the same time, I commenced the sewing of the pedicle in ovarian cystoma in simi-

¹Boston Med. and Surg. Journal, November, 1871, p. 318.

²Transactions of American Med. Assoc., 1878; Transactions of International Medical Congress, 1881.

lar way, and in both operations closed all free surfaces by a continuous glover suture taken through the peritoneum only. This was reported at the International Congress in London in 1881, and has since been ascribed to German authorities, but, so far as I have been able to learn, this is the first reference made to the subject.

The buried suture is one of the chief factors in my method of the restoration of the perineum. Believing that portion of the levator ani anterior to the anus, called the transversalis perinei, the part chiefly injured, which renders possible all the subsequent pathological changes in the vagina and uterus, I dissect the posterior portion of the vaginal attachment from the vulvar tissues and lift this forward, thus rendering it quite easy, with finger in rectum, to introduce deeply a curved needle. The tendon from the kangaroo, used in double stitch as before described, is preferred. In this way, as in no other, can the retracted ends of the transversalis be brought together. Then the external wound is closed in continuous suture, and a double pin is often found useful to hold at rest, as in a splint, the parts without strain.

The abdominal wall in laparotomies for any cause is closed as in hernia, which is only a modified laparotomy; the peritoneum is first sewed and then the remainder of the wound is closed under irrigation. Since adopting this method the resulting cicatrix has been firm and unyielding. I have several times thus operated upon large umbilical hernias with perfect cure. I have used a buried suture with seeming advantage in resection of the pylorus, in one case, and in several cases of intestinal obstruction already reported.

Operations upon the rectum are little improved by any of our modern methods. In hemorrhoids it is true, the clamp and the use of the thermo-cautery are a great advance upon the older methods of ligature, and yet, only recently, in New York, was I shown by one of our best surgeons, an instrument by which the ligature might be more tightly applied and which he thought was better than the cautery. Both are certainly objectionable and the injection methods were gladly welcomed as improvements. These are in turn faulty, since often the tissues, which are important to remain uninjured, are destroyed and the parts to be retained are unaffected. Some years since I operated upon two cases of prolapse by the double suture as described, the results were excellent. More recently I have, in a number of cases, operated in ordinary hemorrhoid in the following manner:

After stretching the sphincter, with the fingers in the bowel, carefully cut through the skin at the junction of mucous membrane to the subjacent connective tissue, this, with a little care, can be done usually almost without loss of blood. In a somewhat similar way divide the mucous coat above the ectatic vessels. Sew with double continuous stitch, if need be, completely around the bowel and then

cut away the mass. With a finer suture join the cut edges over the enclosed first line of suturing (the seam), and thus nicely coapt the parts. Iodoform in the rectum and a careful dusting from time to time lessens the danger of infection, and, if kept aseptic for a few hours only, renders, by cell infiltration, the wound soon free from danger of septic absorption. It is in reality a plastic operation and should be done with all the care of an operation on the face. The pain resulting from the operation is certainly far less than by other methods. The cure is effected in less time and the result is better than I obtained by other procedures. It is simple and easy to do and I commend it confidently to the profession. In varicoceles I tie the veins and seal with iodoform collodion.

The time and thought which many of us have spent upon devising surgical dressings to render the atmospheric contagion innocuous to wounds can hardly be estimated. All of this study and experience has been doubtless profitable and some of its fruitage yet valuable. However, given an aseptic wound, it is easy to retain it so, where drainage is not required, by sealing it with iodoform collodion. Thus treated, so far as prevention from infection is concerned, it matters little what external dressing is used. A number of days later the collodion scale can be separated from the skin, yet holding with it the upper border of each stitch, if taken in the ordinary way. These are separated at the line of the true skin, where the actively proliferating cells have infiltrated the suture and caused its absorption.

It somewhat recently occurred to me that this might be avoided and a gain made in safety and rapidity of repair, by burying even the sutures which coapt the skin. This is easily effected by using a blind stitch, generally best made with a straight needle, lightly but accurately including the connective tissue just beneath the skin from side to side. In this way the cut edges of the skin are brought evenly into apposition without the vestige of a stitch in sight. A layer of collodion completes the closure.

So far as I have been able to learn very little has been written upon this subject. At the late International Congress, Professor Vulliet contributed a paper upon the use of the Iodolised silk buried suture in perineorrhaphy. Thus prepared he claims they are innocuous and efficient. Silk can undoubtedly be made aseptic, but it is much more likely to prove an irritant than the tendon suture, and at the most is encysted, while the gut or tendon suture is replaced by connective tissue cells and there follows a living band in place of the fibres of the suture. It is evident, in most conditions, where sutures are required, if this can be attained, a great gain results. The possibilities of the buried suture are all dependent upon the great fundamental principles of aseptic surgery

which must be observed with the strictest accuracy. The material used must be reliable. I have for years, as a rule, prepared my own sutures, after Mr. Lister's formula, obtaining tendons directly from the hunters in Australia. Last year, in order to economize my rapidly diminishing stock of tendons, I used catgut, imported in the original bottles from a reliable English house, which appeared of excellent quality. In a series of operations performed within a few days, were two hysterectomies for the removal of large myomas. In each instance I sewed the uterine stump and closed the peritoneum with sutures from my former supply of tendon, but joined the recti with the English gut. In both cases, pus formed in the line of the gut suture, one recovered slowly with multiple local abscess in the thick abdominal wall; the second died the thirteenth day from systemic poisoning following a well marked lymphangitis. In neither was the abdominal cavity involved. One Alexander operation and one or two minor cases were also followed by supuration which seemed attributable to the gut.

In all continuous suturing, emphasis should be made not to draw the thread tight, remembering that it is *apposition* not *constriction* sought. The blood supply must be lessened as little as possible. This is diminished at the best by the multiple cuts of the needle and must not be added to by ligation of the enclosed parts. Within a few hours cell proliferation supervenes and the sutures should lie at rest in the tissues.

Perhaps there is no better test of the aseptic skill of the operator than in the introduction of the suture. The greatest care should be used that the thread does not become contaminated by touching septic parts. In the perineum this is especially difficult. The parts should be surrounded by towels wet in sublimate and the irrigation be constant. Septic material on the suture may be deeply implanted into the tissues and most dangerous infection follow. This should be emphasized all the more since it seems almost the only objection which can be raised against the method and in incompetent hands may result in the most serious outcome. To restore the tissues, layer by layer, to their original continuity seems the highest perfection of the end sought. As in fractures of the osseous structures, restoration, fixation, and rest are the factors upon which the resultant depend; a truth to be equally emphasized in aseptic wounds.

THE MAN WITHOUT A LARYNX, whose case was noticed a short time ago, died on June 26. He was in the habit of going to the St. Louis Hospital to have the cannula cleansed. He attempted to cleanse the cannula himself, but symptoms of asphyxia and other complications set in, and he died in a short time.

DISCUSSION ON INTESTINAL SURGERY.

FOLLOWING THE PAPERS ON THE DIAGNOSIS, PATHOLOGY, PROGNOSIS AND TREATMENT OF PERICÆCAL ABSCESS, AND ON INTESTINAL SURGERY.

Read in the Section on Surgery at the Cincinnati Meeting of the Association.¹

DR. EDMUND ANDREWS, of Chicago, expressed his appreciation of the valuable papers that had been read, and was ready to endorse much that had been said. He objected, however, to the too free resort to laparotomy in any cases, especially in diseases of the cæcum. Many of these affections will recover without resort to surgical interference. The abscess if left to itself will find an exit.

He reported a case in which a patient having advanced Bright's disease, of the cystic kidney form, complicated with advanced heart disease, developed an abscess below the umbilicus. Where it came from the doctor in attendance did not know. Finally the fæces began to discharge through the abscess opening. Exploration was resorted to. In following the fistulous opening of the abscess, the operator found that it passed through a mass of fat in the lower outer abdominal wall, then passed inward and upward toward the cæcum. Finding it to follow this course, he desisted from further operative procedure. The pus continued to be discharged; the faecal discharge, however, ceased. But the patient died a short time after from the kidney disease. Had the patient been laparotomized, the speaker thought she would have died as soon if not in a shorter time.

DR. S. W. GROSS, of Philadelphia, being called upon for remarks, responded by saying:

I am very much handicapped here as I have not heard the papers or the discussion. From what Dr. Andrews has said, however, I judge that the question has been raised as to the propriety of laparotomy in cases of perforating appendicitis, perityphlitis, cæcitis, etc. No positive rule, I think, can be advanced in these cases. There are instances in which the abscess points posteriorly and opens behind the cæcum. Of course, no surgeon would think of opening the abdominal cavity in such a case. But I am sure that in all cases of perforation of the cæcum or appendix no surgeon will wait very long before he does a laparotomy.

We may meet, for example, with a case walking typhoid. Suddenly, intense pain is felt in the right iliac region, which pain is circumscribed; there is elevation of the temperature and increase of the pulse rate. In such a case I myself would not hesitate for a moment to lay open the abdomen. I would not wait for any other symptoms to appear, as there are indications of commencing

¹ See papers by Dr. Henry H. Smith, *THE JOURNAL*, June 9; Dr. Thomas G. Morton, June 10; Dr. J. McF. Gaston, June 27; Dr. F. Harvey Reed and L. S. McMurtry, July 7; and by Drs. J. Kanner and Petrov, July 14.

peritonitis. I think that if we neglect these cases the patients will almost surely die; and I believe, on the other hand, that if we operate on these cases, we save them.

DR. A. W. NELSON, of New London, Connecticut: I wish to make report in short of a case that I have recently seen. I think it may be of importance in connection with the advice that has been given to operate in these cases of disease of the cæcum and its region.

I saw in March of this year a young man who had been sick about ten days. The pulse was too a minute; the temperature about 100°. The skin was dry, dark, sallow, the tongue somewhat furred, showing some absorption of poisonous products from the alimentary canal. He had some pain and pointing in the right iliac region with obstruction of the bowel. This pointing was not regular; it was not that of a single abscess coming to the surface, but there were three or four places pointing. The symptoms not being well marked, and there not being a great deal of pain, I aspirated with the dome trocar and removed about six ounces of stinking pus. In introducing the needle of the aspirator, after passing in a short distance, I passed through a firm leathery structure, immediately beyond which I found the pus. I have not seen the case since, but I have a report from Dr. E. Munger, of Niantic, in attendance upon him, that he was immediately better in all of his symptoms. He had an operation of the bowels soon after, and in about a week, he was sitting up. But he had another abscess which opened at the umbilicus. The discharge has, however, ceased. I do not think my method of treating the patient was in accordance with the teaching of most of our experts. The pus was, I think, somewhere within the peritoneal cavity.

I have in mind a young man, who, several years ago, on two successive occasions, had all the symptoms of peritonitis, and in whom I anticipated the development of an abscess. In his case there was a very slow pulse and a subnormal temperature. He was seen by a number of distinguished gentlemen, by Dr. Barker, of New York, among others. He was given large doses of quinine, which perhaps had something to do with the subnormal temperature. The case resulted in the discharge of a large quantity of gray *grainy* and fetid fæces. The patient indulged very freely at the table, and especially in coarse and uncooked food.

These cases lead me to hesitate about the adoption of the operation in all cases of this sort. There is certainly great danger in many of them, that you open not only the abdominal cavity, but also the intestine. If, for example, you have a certain amount of peritonitis and adhesions to the abdominal wall or other organs in the neighborhood, you may very easily cut through into the intestine and have a fistulous opening formed, al-

though I do not now recall any such cases. I think therefore that the operation is to be considered very carefully in every individual instance, before we decide upon performing it. Of course, laparotomy should be resorted to without hesitation, in certain emergencies, and in typhoid fever with perforation, as spoken of a moment ago by Dr. Gross. I do not think, however, that there is nearly so much danger in the introduction of the needle of the aspirator, in the proper cases, as there is in making an incision with the knife.

DR. S. H. WEEKS, of Portland, Maine, remarked that the point of greatest importance in connection with the study of laparotomy is the line of incision which is chosen, in cases in which laparotomy is indicated for perforation of the appendix or cæcum. There exists to-day a doubt as to the best point of incision. Shall it be directly in the median line, or immediately over the cæcum and appendix.

Within the last few months I have been associated with several cases. In one case my colleague made an incision in the median line, and he was obliged after making it to extend the incision at right angles to this in order to reach the point of difficulty. It was evident to our minds at the time that the incision directly over the cæcum would have been better. A few months after that I had occasion to make the operation upon a physician in our town. I made the incision directly over the cæcum and reached the point of difficulty at once.

One word with reference to where the cæcum may be found. Search through the anatomies, search through the majority of the surgeries and you will find no land-mark, no definite point on the skeleton by which you may find this organ. I have made a number of examinations with a view to the determination of this point. If I understood Dr. Morton aright yesterday afternoon, he stated as a result of his own dissections, that the incision should begin at a point about an inch above the middle of Poupart's ligament, and to the outer side of the right linea semilunaris, to be continued from this point upward or outward and upward. He stated that the cæcum lay directly under a point two inches distant from the right anterior superior spinous process on a horizontal line drawn from this process toward the median line of the abdomen. Now, my experience has been from these cases, less than half a dozen in number, that the cæcum is found about one inch above and an inch or a little more internal to the anterior superior spinous process. This is an important fixed point of the skeleton which we can always place our finger upon, and use as a guide to the seat of the disease.

DR. H. H. MUDD, of St. Louis: It seems to me, Mr. Chairman, that this field offers a good chance for the exercise of surgical judgment. The

difficulty here is, as in almost all cases of abdominal operations for obstruction, in the diagnosis and the determination of the conditions which demand or do not demand operative procedures. Ileo-cæcal obstruction offers a good chance for a discriminating diagnosis. We have three sources for the appearance of a tumor in this region: we have first the accumulation of fæces, second an accumulation of gas, and third an infiltration of the cellular tissue about the walls of the intestine, a cellulitis. Now, if we have symptoms of irritation, with moderate obstruction preceding the final development of a tumor, we have something to guide us to the belief that we have an inflammation of the intestinal wall; and if, supervening upon this, we have a sudden acute attack of pain, which is persistent, which is evidenced by increased distention; which is evidenced by all the usual symptoms of perforation, then we have conditions which favor operative procedure at once. But if we have developing with these a slowly forming tumor probably resulting from the infiltration of the cellular tissue of the region, then we have a condition in which we may defer operative procedures for some time. I have seen a number of these cases recover simply after watching; and I have seen others get well after a laparotomy. I may mention that not long ago I saw a case of abscess in the lumbar region; the abscess pointed, was opened, a lumbricoid worm was discharged, and the woman recovered without further operative interference.

I saw a case only last week in which I made a laparotomy under rather unusual circumstances. The patient had had recurring attacks of pain. She had been in the hospital eleven weeks with symptoms of obstruction, a tumor also presenting a little to the right but near the median line. The tumor was overlaid by folds of the intestine, as we were able to determine by hearing the fluid and gas gurgling upon making pressure with the hand. By examination of the rectum I was able to feel the tumor, and could even get fluctuation by rectal palpation. From this I came to the conclusion that he had an intraperitoneal tumor. I made a laparotomy, found a large abscess in the peritoneal cavity, opened it, drained it, and at the post-mortem three days after found this condition of affairs: The colon and a coil of some portion of the small intestine, I am not sure just what portion it was, were in process of uniting, the colon lying in front of the tumor. I found at least 13 inches of the small intestine surrounding this abscess, being held down in the pelvic cavity with such firmness as to cause the lumen to be obliterated by the distension of the abscess. At no point in this region do I think this tumor could have been reached without perforating the intestine itself. It would have been dangerous to have attempted to reach it without laparotomy.

The question which has troubled me most in all

these cases, and which I think is one of practical importance for us to consider, is this: Have we in perityphlitis, typhlitis, appendicitis, etc., a reasonably fair chance to interfere after a suppurative peritonitis has developed?

About the incision—I am not so sure that the inguinal region is the best line. In many instances it will answer, but not as an unvarying rule, because there is no part of the intestine which is so frequently displaced as in this portion.

DR. J. McFADDEN GASTON, of Atlanta: I am particularly anxious to question Dr. McMurtry with reference to cases in which the cæcum is seriously involved, in the trouble; which is quite different from a case of perforation and extravasation into the peritoneal cavity. I did not understand from the report of his case that he had taken any special precautions against extravasation of fecal matter into the peritoneal cavity during his operation. If there had been extravasation, it would certainly have been proper to wash out the whole abdominal cavity thoroughly in order to get rid of this matter.

DR. L. S. McMURTRY, of Danville, Ky.: In regard to the question propounded by Dr. Gaston, I wish to say that the case I have reported was a typical case of septic peritonitis, with perforation of the gut as the direct cause. The peritoneal inflammation was recent, severe and spreading. I attribute the success of the operation in great part to the fact that it was done promptly, while the peritonitis was limited in area and before the entire membrane had become infected throughout.

I think some confusion has crept into the discussion of these important papers from failing to observe the proper distinction between intraperitoneal and extraperitoneal inflammations. When the appendix is attached by the inflammatory process to the abdominal wall, and the perforation is shut off from the peritoneum thereby, an abscess forms in the cellular tissue, and follows the connective tissue planes toward the surface. Opening such an abscess is altogether a distinct operation from abdominal section for perforative peritonitis.

In conclusion I would reiterate the statement made in my paper, and now suggested by the discussion, concerning the use of the aspirator in these cases. As an exploring instrument in these cases it is unreliable, while the danger of infecting the peritoneum by the needle is a real danger. An exploratory incision is more satisfactory and less dangerous.

DR. JOSEPH PRICE, of Philadelphia: I have but a few words to say in regard to this question. I simply accept Dr. McMurtry's paper as legal tender. What he has done and what Dr. Gross has said illustrates very clearly what Mr. Greig Smith has said: "There is passing over America to-day a wave of deep surgical wisdom and originality." Superficial surgery is all very well, but

it is not sufficient in these cases. We must seek the origin of the trouble; we must find the perforation. This Dr. McMurtry did, he set himself to find the cause of the trouble, and having found it, removed it. A member of our profession was suffering and he saved him. I do not agree with what has been said in regard to the use of the aspirator in these cases: with it you can see nothing; you work in the dark. This has been well expressed by Mr. Tait when he said: With a trochar you can feel or see nothing; you make a small opening, drain away the foreign matter, but you cannot introduce a drainage tube.

Surgeons that have not had some special training have great fear about resorting to abdominal section. We have now no fears whatever at opening the peritoneal cavity, as it can be done almost with impunity. At present, too, there is nothing so simple as dealing with pus. I have no fear of deluging the peritoneal cavity with pus. I have recently had several cases in which this occurred; and when I left home all were doing well.

As for the diagnosis of alarming conditions in the abdomen, I would this day rather depend upon a diagnosis made by a so-called general practitioner than I would upon that of a so-called general surgeon.

The only safe rule in regard to troubles in this region is to open the abdomen, remove the confined matter and do it thoroughly; do not leave an oyster-shell in the abdominal cavity.

DR. E. M. MOORE, of Rochester: I have listened to the papers with intense interest; and they are certainly as good papers as could be brought before any Association. But it seems to me that I have failed to hear one or two things that come within the experience of every general practitioner. Now is it not the experience of all of you that you have cases of what was called perityphlitis, occurring in the right side, affecting the cæcum, that come on day after day, and finally get well without surgical interference, and the rule is that they get well? I have seen it over and over again; and my experience has been that if it was sufficiently local, it was sure to get well.

And when we speak of laparotomy, did I understand Dr. Price to say that the operation of cutting into the peritoneum is absolutely free from danger? I must say that I am utterly astounded!

Now how are we to make out the cases upon which we are to operate? We have just heard that there is tenderness and that a tumor is present. Now I wish to make this statement: That if there is a tender spot anywhere in the abdomen and there comes a tumor in the region, it is by no means sufficient to warrant us in opening the peritoneal cavity. We must be on our guard. It so happens that in the right iliac region you will occasionally have these phantom tumors; a

hard mass, that on palpation feels like a board. The patient complains of tenderness. You make percussion and you get resonance. You have gas there. Sometimes you have in connection with this certain symptoms which will help you out in your diagnosis. When you have suddenly supervening upon a moderate degree of inflammation, a violent, sudden attack of peritonitis, coming as a blow, as it were, you then have evidence of perforation into the peritoneal cavity, with this tendency toward sepsis. It is not always easy to determine this point. I have experienced this difficulty. I have opened these cases in which pus was discharged, but I have never had to protect the patient, as there was always a cavity formed sufficiently separated from surrounding tissues. I have opened them from behind. In some of these cases a foreign body will be discharged through the opening, as where a cherry-seed has gotten into the appendix. I remember one case where, when the drainage tube was taken out, there was at the end of it the seed of an orange.

Laparotomy, gentlemen, I cannot believe, is so innocent as is claimed by some.

DR. DONALD MACLEAN, of Detroit, Chairman: I think it would be a mistake if the dictum should be allowed to go out from this Section, that the abdominal cavity can be opened with perfect safety.

DR. P. S. CONNER, of Cincinnati: I am sure that I voice the sentiment of the Section when I express high appreciation of the papers read yesterday—papers which presented to us the results of experience and experiment, and gave us positive rules in the treatment of cases of most difficult character; and last of all we had the most beautiful demonstration that I think has ever been given to the profession of this country. Nothing could exceed the labor and patience with which were worked out the experiments presented to us yesterday by Dr. Senn. He literally, absolutely, in every sense of the word, threw light upon an exceedingly dark subject. I am very certain that no class of cases come before us which give us more anxiety either in the detection of the difficulty or in the treatment of it, than intestinal obstruction. If we were to believe all we read and a good deal we hear, we would suppose it an easy matter to determine the character and location of intestinal obstruction. The diagnosis has been very positively laid down in the books, but I think that I can appeal to the surgeons in this room whether they do not agree with me, that however clear it may be in print, it is a very different matter with a patient in bed. It is sometimes very easy to determine what the nature of the difficulty is; in other cases, notwithstanding the employment of the most accurate methods of investigation, it is very difficult to determine what the difficulty is, or where that

difficulty is located. In some cases too it is easy, in others difficult to determine what is to be done; but after all it is the determination of the difficulty itself which is the great trouble.

Leaving out of consideration the various separate forms of intestinal obstruction, whether due to impaction, to invagination, to bands, twists, compression by tumors, and what not, we have two kinds of cases to deal with: First, rapidly developed cases, coming on in patients in good health; and second, slowly developed cases, occurring in individuals whose health is good or bad. To these we might add a third form, namely, suddenly developed cases following old chronic forms of intestinal trouble.

Letting the patient alone, the difficulty may sometimes terminate in recovery, but may, and frequently will, result in death. When recovery follows the let-alone plan of treatment, we congratulate ourselves that recovery has taken place. And who of us has not seen cases in which active interference has resulted in the relief of the patient, and again where it has proved fatal. I have twice in my own practice seen, after the release of a strangulated hernia, absolute paralysis of the bowel continue, and the patient died just as certainly and just as quickly as though no operative procedure had been undertaken.

To discuss this matter to-day is a very different thing to discussing it ten years ago. Abdominal surgery has made rapid progress; some of it, I was about to say, too rapidly made, and liable to lead in the wrong direction. Active interference is the only rule to-day. Our duty is to discover the seat of the lesion, to remove the obstruction, and to put the patient in a proper way for recovery. A world of truth was uttered yesterday by Dr. Moore, when he took exception to the remark that the abdomen might be opened with impunity. It is not a light thing to open the abdomen. Laparotomies have killed patients, as we know by experience and by statistics, which latter, I am sorry to say, are not always as reliable as they ought to be.

Where a positive diagnosis can be made the belly should be opened. The chances for death are almost certain if the patient is let alone, and the chances are certainly not worse where the abdomen is opened. If I were myself the subject of an accident of this sort, it would not be many hours before I should ask some of my friends to open me and see what the condition was; relieve it if possible, and if not, let me die in accordance with the art.

Sometimes the difficulty is of such a character that it cannot be removed. Sometimes the patient is in such desperate straits that although removal is possible, yet the operation would kill on the table. If the obstruction is due to strangulation, to the slipping of a knuckle of the bowel

through an opening in the mesentery the constriction can be relieved; if it is due to organic disease of the bowel, it may be possible to take away a section of the intestine, and restore the continuity by suture or to form an artificial anus, and for the time save the life of the patient.

It has sometimes been a matter of great difficulty to determine where the obstruction is located after the abdominal cavity has been opened. It is vastly different to open the abdomen for the removal of a tumor where the abdominal walls are immensely distended, and opening it for the relief of such a condition as that under consideration, where as soon as the abdominal walls are penetrated, the viscera protrude.

DR. S. H. WEEKS: In the first place I wish to express my high appreciation of the great value of the papers that have been read. And the only difficulty I feel upon my part is to know what to say in the brief space of ten minutes. The discussion I understand is limited to the treatment of intestinal obstruction in its surgical aspects. I wish to lay especial stress upon the last two words, because it is not every case that is to be treated by surgical measures; many cases are to be treated by medicinal means. It is not every case that should be subjected at once to operative measures; a certain time should be allowed to elapse. Several years ago, when laparotomy was first brought to the attention of the profession, for intestinal obstruction, I was called to see several cases in which the symptoms were obscure. The first was a man in business, 40 years of age, previously well, was suddenly seized with pain in the right hypochondriac region. (Here let me say that the pain in acute intestinal obstruction is not always at the point of obstruction.) This case was supposed to be one of the passage of biliary calculi. The symptoms were great pain, prostration, cold surface, feeble pulse, rapidly followed by nausea, vomiting, which became stercoraceous in character, diminished quantity of urine. The patient died in four days. The autopsy revealed an obstruction four inches above the cæcum, which could easily have been relieved by a surgical operation if done in time. Shortly after this case, I was called to another, a lady in fair health, who manifested almost the same symptoms with almost total suppression of the urine, and great restlessness. She died in forty-eight hours. The autopsy revealed a strangulation high up occasioned by a fold of omentum being wound around a knuckle of the intestine. Again a few months later, after having had my attention called to the importance of laparotomy in these cases, I was called in consultation to see a man previously well, who was suffering from all the symptoms of profound prostration; he was almost moribund. He and his friends were ready for almost any operation. We operated upon him; found the strangulation, relieved it, he was

immediately relieved of his pain and vomiting, but died in 48 hours from exhaustion. The operation was delayed too long.

It is an important matter in connection with these cases that the operation must not be delayed until the intestine becomes gangrenous.

Now let me call attention to the most difficult part of the matter under consideration, and that is, the diagnosis. What are the symptoms which characterize acute intestinal obstruction, and which justify the surgeon in performing laparotomy. We all know that in regard to the operation of external herniotomy for the relief of strangulated, external hernia, a great change has come over the minds of surgeons in the last 20 years. I remember when we all thought that it should be the last resort. Now we claim that the earlier a strangulated hernia is relieved the better. I will go a step further, and I will claim that no surgeon to-day ought to let a patient die of an internal strangulation any more than he would allow a patient to die of an external strangulated hernia. When he finds a patient suffering from the symptoms which characterize an internal strangulation, then I think he is justified in resorting to the operation of laparotomy. These symptoms are, sudden stoppage, great pain, great prostration, feeble pulse, anxious appearance, restlessness, nausea, vomiting, speedily becoming stercoraceous. When the surgeon feels morally certain that he is in the presence of an internal strangulation, a great responsibility rests upon him, and he makes a serious mistake if he fails to perform his duty, by making laparotomy and relieving the strangulated bowel.

CASE OF ANTEPARTUM HOUR-GLASS CONSTRICTION OF THE UTERUS.

Read before the Cambridge Society for Medical Improvement, April 23, 1888.

BY AUGUSTUS P. CLARKE, A.M., M.D.
OF CAMBRIDGE, MASS.

At 2 A.M., February 1, 1888, I was called to attend Mrs. B., aged 42 years, who was in labor at term for the fourth time. The patient had awakened at 12:30 A.M., when the membranes ruptured and the liquor amnii escaped. Her oldest child was 17 years of age, and at her birth there was nothing peculiar about the labor the duration of which was only twelve hours and ether being administered during the last hour. The next child was 11 years of age and the time occupied by the labor of her birth was ten hours. Ether was given during the last two hours. The third child was 7 years old, and ether was given during the last three hours of the labor. The time occupied by that labor was twelve hours.

At the time I was called, on February 1, the pains occurred every few minutes, though there was scarcely any dilatation of the os. In fact,

during each recurring pain the os and cervix became rigid and the index finger was with great difficulty passed through the os, and it brought up against the internal os, which appeared to be in a closely constricted state. The pains continued to increase in frequency and strength and the patient within an hour after my arrival was compelled to go to bed. The pains continued to recur at intervals of every four or five minutes and were of so severe a type I deemed it necessary at 6 A.M. to administer small doses of morphia. The cervix was unusually elongated, and while the external os became more open and dilatable the internal os and the uterine segment immediately above presented a firm and closed barrier against any appreciable descent of the head of the child. As the uterine pains grew stronger the foetal head could be felt to mount up against and over the os pectinis. At 9 A.M. the patient was allowed to inhale small quantities of ether, which had the effect of controlling in considerable measure the severity of the pains.

As the case dragged on frequent and guarded attempts at manual dilatation were made, to overcome the constriction at the lower segment of the uterus. The moderate use of ether was continued at intervals until 3 o'clock P.M., when the fingers could be passed on at the beginning of a pain through the constricted ring of the lower segment of the uterus, but almost invariably before the close of each pain the fingers were immediately forced outward and the upper zone of the uterus, became a closed cavity. By patience, perseverance and by gentle manipulation, and continued use of ether, the chief obstacle to the descent of the head was overcome, and a strong female child weighing eleven pounds was born at 5 P.M., the labor before the birth of the child having occupied 17 hours. During the descent of the foetus, as it emerged from the vulva, firm but gentle pressure was maintained over the fundus of the uterus, outside, and the shoulders and body of the child were not hurried but were allowed sufficient time in the passage of the pelvic arch. As soon, however, as the child was free all pains ceased and the placenta became imprisoned in the uterine cavity—above the lower segment. Fully one hour elapsed before the placenta was brought away, and it became necessary to resume the use of ether, and to carry the fingers and hand along the funis through the internal os and lower segment of the uterus, which were at first firmly closed and only yielded entrance by gentle and persistent effort with the hand. Hæmorrhage for awhile became alarming, but was at length controlled, and the patient rallied that evening and became quite comfortable.

There was not the slightest laceration either of the perineum or of the cervix. There was no deformity of the pelvis, and the diameters of the foetal head were normal, and the head showed no

indication of compression, nor was there any contusion of the scalp. The position of the child was favorable, the nape of the neck being behind the left acetabulum and the bregma to the right sacro-iliac synchondrosis.

The early rupture of the membranes undoubtedly occasioned to some extent the uterine constriction, and the loss of the amniotic fluid prevented the expansion of the soft parts so essential in the first stages of labor. After the close of labor quite a large mass of internal hæmorrhoids were extruded. These hæmorrhoids must have contributed to the spasm of the uterine tissue, as it is well known that any irritation occurring about the rectum or anal sphincter is likely to be transmitted to the neighboring organs, and especially to the genital tract, and there become the centre of nervous disturbance. Ramsbotham regards hour-glass contractions as an occurrence in which the whole cavity of the uterus is the upper chamber the cervix the constricted portion, and the dilated vagina the lower segment, and that a coagulum of blood is usually in the lower chamber. The same author coincides with the idea that in cases in which hour-glass constriction, or chaton, as the French say, is present the placenta or some portion of it is adherent. He does not regard the occurrence of hour-glass constriction as being so common as authors had heretofore believed. Cases of flooding, he remarks, do not depend upon the occurrence of this peculiar kind of contraction. The uterine constriction, he further observes, is of different kinds—sometimes only the central fibres contract, leaving those of the fundus and cervix relaxed, and thus preventing the natural descent of the placenta.

In the *Boston Med. and Surg. Journal*, 1883, Vol. 109, page 374, Dr. J. Stedman reports a case in which the constricting ring, instead of being circular was transversely elliptical, and the uterus itself was very movable and hard to fix. After an hour and a half he succeeded in passing the hand, when the placenta and all were expelled by the uterine contractions. The hæmorrhage that occurred was not alarming. Some observers maintain that anæsthetics predispose to hæmorrhage, while others, as Dr. Boardman, have found that ether given in the usual way exerts a favorable influence on the progress of the case.

Dr. Boardman enumerates several factors that may predispose to hæmorrhage, and which are in danger of being overlooked; the resulting hæmorrhage is ascribed to the influence of ether. In the management of the case here reported I discontinued the use of ether as soon as the child was born. After waiting an hour, and there being no return of the pains I thought it necessary to resort again to the use of ether because there was hæmorrhage that had to be controlled before the patient should become exhausted, and the insertion of the hand into the cavity of the upper uterine segment

appeared quite impossible without the help of the relaxing effect of an anæsthetic. The persistence of the antepartum hour-glass constriction disclosed the fact that it would be unsafe to rely on the unaided powers of nature to overcome an obstacle the presence of which had placed the lives of the mother and child in such extreme peril. After the hand had gained admission through the uterine constriction, the placenta was reached, and without further serious difficulty brought away, and there was no indication that any part of the placental mass had been adherent. The constricting ring was elliptical, but the greatest degree of resistance it offered was at the posterior aspect of the uterus.

In considerable measure morphia and ether had the effect of preventing the occurrence of the lengthening and attenuation of the textures of the uterine cervix, a condition so liable to take place in cases in which a constricting ring of the uterus occurs. This condition of the cervix began to show itself as soon as the uterine contractions became frequent and of an energetic character, and the line of constriction just above the symphysis pubis, indicating the division between the cervical and fundal portions of the uterus, was easily recognized both by palpation and inspection of the abdomen.

As regards the treatment of cases in which such constriction of the uterus occurs, I have but little to add aside from what has already been mentioned. Suffice it to say that my experience in this, as in a few other similar cases that have come under my care, has led to the conviction that treatment in which manual or mechanical interference plays an important part should be conducted with the least possible amount of force, and it is often better to defer for awhile all mechanical measures than to incur the hazard of hastening or prolonging the dilating process. All oxytocics should be avoided. Opiates and other anodynes, as also anæsthetics, should be resorted to, but not in quantities sufficient to reduce the strength of the patient. The patient should be urged to take at short intervals all the liquid nourishment possible. Stimulants should be at hand, and should be given liberally should signs of exhaustion appear. The advantage the use of antiseptics may afford should not be overlooked.

I should have stated that I continued my visits daily until March, when the patient was able to leave her bed. Soon after she went out and took exercise in the open air. The chief obstacle to her early recovery appeared to be occasioned by the excessive loss of blood and by the presence of the hæmorrhoids already mentioned. These had become inflamed and were the cause of considerable constitutional disturbance. There was for several days an increase of temperature varying from 100° to 101.5°, and occasionally reached as

high as 102° , but as soon as the inflammation of the hæmorrhoidal mass subsided the temperature became normal. There was at no time any evidence of septicæmia, and there was no suspicious discharge nor bad odor from the vagina.

During the second week after labor the patient had almost every day a severe attack of pain in the right hip, which lasted for several hours. This pain was evidently of a neuralgic type, and was at length controlled by the administration of a pill composed of opium, digitalis and quinine. Up to this time the complexion was sallow, the lips pallid, and the whole organism was in an exhausted condition. I should further say that Mrs. B. some years previous had been subject to severe attacks of gastralgia, which only yielded to full and frequent doses of opiates. She had not however experienced such an attack for several months immediately preceding her last pregnancy. I mention these facts because they show a constitutional tendency towards the occurrence of reflex irritation which in its various manifestations comprises, as I believe, spasm or constriction incident to the uterine tissue. These may lead to the development of that peculiar condition known as antepartum and postpartum hour-glass contraction.

TWO CASES OF GUNSHOT-WOUND OF THE ABDOMEN IN WHICH THE HYDROGEN-GAS TEST WAS APPLIED.

BY J. L. HILLMANTEL, M.D.,

HOUSE SURGEON COOK COUNTY HOSPITAL, CHICAGO, ILL.

The report of the following two cases is given to show the result of the application of the latest method of diagnosis of perforating wounds of the intestines, as devised by Dr. N. Senn, of Milwaukee.

Case 1.—P. C., male, æt. 50 years, in good general health. Was shot at 2 P.M., July 4, by a man sitting about eight feet directly in front of him. The calibre of the ball could not be ascertained. A physician was summoned, who made an examination, and after introducing a probe several inches, he advised sending the patient to the Hospital. He was brought here sitting in a carriage with no dressing on the wound. Upon his entrance here, 7 P.M., the abdomen was disinfected, the wound sealed, and a hypodermic injection of $\frac{v}{ij}$ of Magendie's solution given.

Examination.—Patient conscious, no marked pallor, hands cold. Pulse full and 96 a minute; temperature 99° . Some pain in abdomen. An opening with blackened margins was found just to the right and on a level with the umbilicus from which a small quantity of bloody fluid oozed. Abdomen not distended, but showed a changing line of dulness, corresponding to changes in posi-

tion of patient, and indicated the presence of fluid in the peritoneal cavity. Liver dulness present. Patient very restless. Introduction of catheter gave about ten ounces of normal urine. Rectum filled with feces, but contained no blood. After about 15 minutes he vomited for the first time since injury; vomited matter contained no blood. Hydrogen gas was then insufflated, the entire intestinal canal being distended until the man complained of a tense abdomen and "belched up." The gas could be accurately followed, passing through the ileo-cæcal valve with a gurgle, next filling up the umbilical region and finally distending the stomach. During this time the wound was very closely watched to notice the escape of gas. None escaped, but some bloody, serous fluid was forced out by the general distension; and as the wound was all this time covered by fluid, gas would have escaped in bubbles. A stomach tube was then introduced, which procedure caused much straining.

It was decided that the pressure exerted and the escape of gas from the mouth were sufficient proof that the intestinal canal was intact and that laparotomy was not indicated. The wound was dressed antiseptically, patient put to bed at 9 P.M. and treated as after laparotomy. He rested fairly well during night. Urine passed normally. Bowels quiet for three days when he received by mistake some potatoes and mush, after which he had one or two normal bowel movements daily. He was then put on light diet.

July 10th, the wound was dressed and found to be closed. An area of induration was present around the same of the size of a quarter of a dollar, which was somewhat tender. On the same evening patient vomited once, ejecting only the ingesta. The next morning patient felt as usual. The pulse had been between 72 and 96 a minute all this time; temperature between 99° and 100° . At noon patient vomited again and pulse rose to 110. During the afternoon he vomited twice more and pulse gradually rose to 140. Temperature 100° . At 7 P.M. patient bathed in perspiration, pulse very weak.

Dr. Feuger made an examination and found a small tumor in right hypochondrium, which was painful on pressure. No abdominal distension, percussion gave flatness especially over right side. Dr. Feuger decided to make a laparotomy immediately. An incision, 5 in., was made to right of umbilicus. The stomach was found dilated. Recent adhesions between coils of intestines omentum and mesentery. Upon breaking through these, about 8 ounces of thin, milky, purulent fluid gushed out, omitting a slightly fecal odor. The patient was turned on his right side and the cavity flushed with warm boracic acid solution. The remainder of the peritoneal cavity was protected by shutting it off with a hot towel. A large glass drain was inserted together with some gauze,

abdominal walls closed and dressed. Ether was used as an anæsthetic and continual stimulation was necessary. The abscess cavity was washed out every two hours with warm boracic acid solution. The patient's pulse gradually failed and he expired eight hours after the operation.

Autopsy. Ten hours after death. On opening the abdominal wound the omentum and intestines were found agglutinated. The glass drain was in the bottom of a pus cavity just to the right of the stomach, between it and the turn of the duodenum. On separating the adhesions, three more pus cavities were found; closed off by adhesions formed between the omentum, pancreas, and coils of ileum and possibly following the tract of the bullet or probe. No fluid was found free in the general peritoneal cavity, but all intestines presented a congested appearance. The entire gastrointestinal canal was searched for perforations, but none were found. The pus in the cavities contained no fecal matter. The remaining abdominal organs were also found congested. The stomach contained dark grumous matter.

Case 2. Patient, male, æt. 23, in good health, was shot with a pistol, calibre 32, held in his own hand during the act of striking another person with the butt-end. One and one-half hour after injury he was brought to the Hospital. Complained of some pain in abdomen. Vomited shortly afterward and made several ineffectual efforts at defecation. Vomit contained some clots of blood. Dr. Fenger was summoned.

Examination. Patient conscious, very thirsty. Pulse somewhat feeble and 100. A bullet wound was present, one inch to right and on a level with umbilicus. Percussion showed presence of liver dulness and a line of dulness extending down on right side of abdomen in a curved direction, concave toward umbilicus, from liver to pubes, pointing to the presence of fluid in the abdomen. Catheterization gave 6 ounces of normal urine. Patient etherized and hydrogen gas-test applied. On introducing the rectal tube for that purpose, blood was found present in the rectum. The gas, with only slight pressure, was soon heard to enter the abdominal cavity with a gurgling sound, and in a few seconds issued in bubbles from the bullet wound. On application of a lighted candle these burned in spurts. Dr. Fenger decided to perform laparotomy, as the proof was conclusive that the intestines were perforated.

Incision, 6 inches, in linea alba, and subsequently enlarged to 10 inches. A large quantity of blood escaped with a gush. Almost the entire abdominal cavity was filled with blood. Fourteen perforations were found between the ileo-cæcal valve and the stomach; also two severe contusions of the external coats of the intestines, so that it was deemed necessary to cover the places by peritoneal sutures. Besides these, four holes were found in the mesentery in which were numerous

bleeding vessels. The perforations were closed by Czerny-Lembert sutures. In two places two perforations were so close together that they were included by one line of suture. At two other points there were four perforations so close together that it was necessary to remove these portions of the gut. This was done by resection, the cut ends closed, and the continuity of the lumen restored by lateral approximation with decalcified bone plates after the method of Dr. Senn.

After all the apertures found were closed and the vessels tied, the intestines were replaced and gas again insufflated. The sutures proved to be absolutely air-tight. Some bubbles, however, escaped from the upper extremity of the incision, but Dr. Fenger thought it came from the peritoneal cavity. The abdomen was flushed, but the patient, from shock and loss of blood, was expiring. During the operation the entire mass of intestines was necessarily exposed, but was kept covered with towels and hot boracic acid solution allowed to trickle over them. Constant stimulation was necessary to keep the patient alive.

At an interval of an hour two infusions of saline solution were made, 16 ozs. being used each time. A marked beneficial effect was noticed on the pulse as well as on the general condition of the patient. Abdominal wound not closed, as the patient had expired. Duration of operation two hours and three-quarters.

Autopsy one hour after death. On removing the intestinal tract the following appeared: Two contusions in the mesentery of descending colon; large contusion with extravasation of blood in transverse colon with a wound in the mesentery; contusion of mesentery at ileo-cæcal valve; contusion of coats of ileum 8 inches above ileo-cæcal valve; extravasation of blood in mesentery 14 inches above valve; perforation 23 inches above valve in intestine (sutured); the same 32 inches above previous (sutured); same 30 inches above previous (sutured); same 18 inches above previous (sutured). Bone plate approximation 9 inches above last, where resection of 3 inches of gut had been made, the resected piece presenting four perforations. Extensive extravasation of blood immediately above this point in mesentery. Contusion of intestine 9 inches above the resection. Contusion and extravasation 29 inches above same point; perforation 47 inches above same point (sutured). The second place of lateral apposition was found 11 inches below pylorus, where 2½ inches of gut with four perforations had been resected. Finally, a perforation was found in the pyloric end of the stomach which was not sutured.

The remaining viscera were found normal. After a diligent search the bullet could not be found, although all the organs were examined, as well as the entire spinal column exposed. A minute dissection could not be made, as the section had necessarily to be stopped, but the supposition was

that the bullet had lodged in the muscles of the back.

REMARKS.—In the first case we have an excellent illustration of the proficiency of the gas-test in cases in which there is no perforation, and we may say with safety that one unnecessary laparotomy was prevented, the exit of the gas through the mouth and the absence of the same in the peritoneal cavity after complete distension, proving that the walls of the gastro-intestinal canal were not broken. This patient was not anesthetized, and the insufflation caused no inconvenience besides the belching. The secondary laparotomy became necessary after the formation of abscesses along the tract of the bullet. The formation of these was undoubtedly the result of infection through the external wound and not through extravasation of feces.

In the second case we see the gas escaping in bubbles with the greatest ease from the bullet wound in the parietes, removing all doubt as to the diagnosis. In this instance the gas-test might be said to have been superfluous, as the other symptoms and signs were conclusive, but the time occupied was so short, and the result so striking that the procedure can hardly be criticised. This method of diagnosis will do its good work by its negative results, and will undoubtedly prevent many unnecessary exploratory laparotomies, as it did in this first case, and it should be applied in all doubtful cases before a patient is exposed to the great danger incurred by exposure and close examination of the entire abdominal cavity for the purpose of searching for that which does not exist.

Furthermore, by the application of the test after all perforations found have been sutured, the existence of more apertures may be ascertained by the escape of gas; it also proves the competency of the intestinal sutures, and the permeability of the canal at the points where the bone plates are used.

The gas-test was applied in the presence of Drs. Price, Allport, Brown, Hodges, Hart, Hickey and Hektoen.

I. THREE SUPRA-EPIGLOTTIC BENIGN NEOPLASMS. II. A NEW PROCEDURE IN THE TREATMENT OF CYSTIC GOITRE.

Read before the Section on Laryngology of the Ninth International Medical Congress, Washington, D. C., September, 1887.

BY WILLIAM PORTER, M.D.,

PHYSICIAN TO ST. LUKE'S, AND TO THE PROTESTANT HOSPITAL;
CONSULTING PHYSICIAN TO THE CITY HOSPITAL, ST. LOUIS.

I. Three supra-epiglottic benign neoplasms.

(a) Cyst of posterior pharyngeal wall.

This was the case of a poor woman about 27 years of age whom I saw in my clinic. Her only symptom was dysphagia, and the constant evi-

dence of something "sticking in her throat." A direct examination revealed a cyst of the mucous membrane, about $\frac{1}{2}$ -inch in diameter and projecting fully $\frac{3}{8}$ -inch from the posterior pharyngeal wall, a little below the level of the tonsils. With a curved pointed bistoury the sac was freely laid open from below upwards. To the inner surface tinct. ferri hydrochlor. was applied, and the patient made a quick recovery, though until she ceased her visits there was some thickening at the site of the cyst.

A mucous cyst projecting from the back of the epiglottis, and partly covering the glottis, is recorded by Durham (Med.-Chir. Trans., xlvii), also retro-tracheal gland-cysts are described by Prof. Gruber which opened by several sinuses into the trachea.

(b) The second case is one which is yet under observation (August 10, 1887). A young married lady, very nervous but of good physique, was brought to me on account of an incessant cough and some difficulty in swallowing. A papillary growth was found, having its origin just below the left tonsil, but entirely distinct from it. The papilloma encroached upon and hung over the left wing of the epiglottis. It was as large as an ordinary Malaga grape, having a thick, strong pedicle. The patient declined operative interference, but I succeeded in getting her to consent to the application of a destructive agent. Chromic acid was repeatedly applied to the pedicle, and in a fortnight the nutrition of the tumor was evidently much impeded, and in another week it sloughed so nearly off that it was easily detached by forceps. The troublesome cough is nearly gone, though the patient has yet some irritation about the original site of the tumor, but this is disappearing.

Luschka (*Virchow's Archiv*, vol. 1), and Sommerbrodt (*Ibid.*, vol. li), have each described cases of pharyngeal papilloma, while Mackenzie (*Diseases of the Throat and Nose*, vol i) refers to several cases varying in size from a pea to a small grape. This author also refers to two preparations of pedunculated tumors removed during life, now in the museum of the Royal College of Surgeons.

(c) Chondroma of epiglottis.

I will merely refer to this case, as I recorded a full account of it, with the bibliography to date, in the *Amer. Jour. of the Med. Sciences*, April, 1879. The patient was a stock-raiser, æt. 44. A tumor was found occupying the left margin of the epiglottis, extending about 3 lines into the substance of the normal tissue, which caused difficulty in swallowing and some pain. It was easily removed by rectangular cutting forceps, and the margin rapidly healed. The growth was a chondroma directly connected with the epiglottic cartilage.

II. A new procedure in the treatment of cystic goitre.

During the past year several cases of cystic goitre have been treated by what I believe to be a less objectionable method than the usual one of injecting the sac after evacuation by a solution of iodine or iron. I will give but one history, though the result has been good in all. A gentleman having a large cyst of the thyroid gland consulted me early last spring. The growth greatly interfered with his comfort, the trachea being pushed to the left in a marked degree. He objected to the usual plan of injection, as I told him it would probably necessitate his being confined to his room for some days. The fluid was drawn off by means of a small trocar and canula, and 6 inches of catgut steeped in tr. iodine inserted through a canula, which was then withdrawn, leaving a little of the foreign body projecting. As soon as there were symptoms of local inflammation evident the catgut was withdrawn. There was no annoyance from the treatment, and no return of the cyst.

2830 Locust Street, St. Louis.

A NEW METHOD OF TREATING ABSCESSSES—EVACUATION; THOROUGH SOLUTION OF THE ADHERING PUS; DISINFECTION; DISTENSION AND COMPRESSION.

Read in the Section of Obstetrics and Diseases of Women, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WM. C. WILE, A.M., M.D.,
OF DANBURY, CONN.

EX-VICE-PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION;
MEMBER OF THE BRITISH MEDICAL ASSOCIATION.

The proper treatment of an abscess, of any size, character or location, has long claimed the attention of the surgeon, and the literature on the subject is almost as prolix as that of infant feeding. Various methods have from time to time been devised and given out to the profession, some of which have produced valuable and permanent results, but nearly if not quite all have the objection that, in order to carry procedure out, the knife must be used to a greater or less extent. This is not only a source of dread to the patient, but involves also considerable suffering, the solution of continuity of the tissues, tardy repair, accompanied with the attendant danger of sepsis from the exposure of the pus carried to the air.

In the last ten years I have had a great number of these phlegmons to treat, and I have tried all the known methods of procedure, with varying success; but at no time have I been entirely satisfied with the results obtained. For the last year I have been using the method described below, with the most satisfactory and unvarying results, in all classes of abscesses not multiple, and not situated in any of the great cavities of the body.

As soon as I am satisfied that pus has formed, I plunge into the cavity a large-size aspirating

needle, and attach to it an Allen Surgical Pump, such as I show you, and by turning the crank, remove all that is possible of the contents of the sac. I then take a 20 volume solution of perox-



ide of hydrogen. To this I add an equal volume of water and, by reversing the motion of the handle of the pump, without withdrawing the needle, I inject the cavity till it is moderately distended only. Almost immediately I find that the distension becomes greater and greater until I am satisfied that the medicament has reached every nook and corner. Then I simply turn the pressure off from the rolls of the instrument at the back of the pump, the accumulated gas which has been given off rushes out through the tube, carrying with it a considerable quantity of *débris*. I tighten the rolls again and, continuing the motion of the instrument in the same direction, I extract every particle that is left, and repeat the procedure as before. At the second washing with the peroxide I notice that I do not get nearly so much distension, and when the screw at the back is loosened for the second time but little of the gas and fluid comes away. After this comes off I am sure that I have a perfectly clean cavity. Now I take a solution of bichloride, 1 to 2,500, and again inject and withdraw two or three times. I am confident that I have a perfect aseptic cavity. At this stage the needle is removed, and I place over the whole integument overlying the abscess a smooth, even pad of iodoform gauze. I bind it firmly and neatly in place by an abundance of bichloride gauze bandage.

This dressing I invariably leave in place from four to ten days, when I always find complete closure of the cavity, perfect adhesion of its walls, and not a trace of the abscess left. The patients are simply delighted that no knife is used,

and but very little pain produced, no after-dressings required, no salves, solutions or ointments, no washings or daily dressings; a simple, almost painless procedure, with a rapid cure and no cicatrix. I do not believe there is to-day any other mode of procedure in this particular class of affections that will produce such satisfactory results for the same amount of outlay of skill and time.

In the many cases which I have operated upon I have never seen a single untoward effect, though I have treated nearly one hundred abscesses of one kind or another in this manner, nor do I believe that there is another instrument made which can do this work so easily and well as the little one before you. Its operation is perfect, its exhaustion complete, and by a single reversal of the direction of the crank it will either inject or exhaust without turning a stopcock, or making a single extra movement; in fact, I do not know of any single instrument that will do so many things so perfectly and with such little effort on the part of the operator, and costing so little money, as the Allen Surgical Pump. The one that you see I purchased from Chas. Truax & Co.

MEDICAL PROGRESS.

ESTIMATION OF GLUCOSE IN URINE.—DR. WALTER MENDELSON calls attention to a method of using Fehling's quantitative determination for glucose in urine, which effects a saving of fully one half the time usually required. Every one who has critically examined many specimens with Fehling's solution will have noticed two striking facts. The first of these is that some urines from which sugar can by various tests be positively excluded will decolorize the solution, and even give it an orange or opalescent-green tint. The second is that urines known to contain sugar fail to produce a characteristic precipitate with Fehling's test, giving, instead appearances identical with those just described, or filling the test-tube with a precipitate usually of a yellowish-green color, which never turns red and never satisfactorily settles to the bottom, and which is, moreover, so fine as to pass through most filters. The reason for these disturbing variations from the classical action of the test, is to be found in the fact that urine contains normally two classes of bodies, one of which has the power of reducing copper oxide, and the other of redissolving such oxide when from any cause it has been reduced. The less sugar the specimen contains, the more disturbing these variations become, and it may happen that as much as one-half of 1 per cent. of sugar is present without a characteristic precipitate being formed. Concentrated high-colored urines are, as a rule, more apt to show these peculiarities

than dilute, pale urines. Two kinds of error are consequently likely: One that traces of sugar may be overlooked, the other that traces may be reported in urines containing none. The non-appearance of the red oxide and its replacement by a greenish-yellow precipitate, which persists in remaining in suspension for an indefinite length of time in the contents of the flask, are common sources of vexation to any one whose time is precious. To avoid these difficulties, the following procedures should be employed:

First, use a flask capable of containing about 250 c.c. after adding the usual 10 c.c. of Fehling's solution, fill half full of water, or till the solution is of a very pale blue. The reaction takes place much better and can be more closely observed than when the test solution is used in concentrated form. Secondly, the urine should be well diluted. Make a preliminary qualitative test to judge approximately of the quantity of glucose present and dilute accordingly. One in ten is a convenient strength. This, together with the thinning of the Fehling's solution, will insure proper dilution of the normal reducing and dissolving substances of the urine, and minimize their disturbing action. The temptation to use the urine but slightly diluted or of full strength when the amount of sugar is small, so as to shorten the time necessary in using the burette, is very great, but will always be regretted if yielded to.

Put the diluted Fehling's solution on to boil while preparing the dilution of urine and filling the burette. Then, when all is ready, in starting the process, allow only a small quantity—from one-half to one c.c.—to flow from the burette before boiling again, removing the flame and allowing the ebullition to cease each time before adding more. *Boil hard* each time, as this causes the particles of oxide to cohere and fall to the bottom more quickly than otherwise. Even under the most favorable circumstances—that is, when a red precipitate appears at once and falls quickly to the bottom as the reaction nears completion—a considerable time must always elapse before the supernatant fluid is sufficiently clear to allow the analyst to determine whether all the blue color has been discharged or not, especially as the fine particles of red oxide, when in suspension, give to an otherwise colorless fluid a violet shimmer. This settling may be hastened by adding a dash of cold water to the contents of the flask; but Munk¹ has devised a method which is probably the greatest improvement in the use of Fehling's solution since the test was first proposed.

This consists in adding a small quantity of a solution of calcium chloride to the mixture in the flask. (Munk recommends three to five drops of a 15 per cent. solution, but in practice I simply

¹J. Munk, Virchow's "Archiv," vol. cv (1886), p. 63. I have made an abstract of this article, which may be found in the "American Journal of the Medical Sciences" for October, 1886, p. 543.

make a pretty strong solution, and use as much as seems needed.) A voluminous, white, curdy, precipitate is formed, consisting in part of calcium hydroxide and in part of calcium tartrate, the latter being less soluble in hot than in cold solutions. This precipitate, from its curdy, gelatinous nature, carries down with it the impalpably fine powder of the copper oxide, and quickly leaves a clear supernatant fluid in which the most delicate shade of blue is discernible, if present. In practice I have found the following the best mode of procedure:

If the oxide comes down red in the beginning, I continue adding from the burette until the rapid falling of the precipitate to the bottom of the flask warns that the reaction is nearly complete. I then add about ten drops—or enough to give a pretty large quantity of precipitate—of the calcium-chloride solution. When the precipitate of copper is yellowish-green and shows no sign of turning red, I add the calcium-chloride solution as soon as I have satisfied myself of the latter fact. Great care must be used to boil slowly at first, allowing the flame of the burner to play gently, with frequent removals, about the bottom of the flask until the whole mass gradually boils.

If this is not done, owing to the character of the precipitate, explosive boiling may occur, and the whole contents of the flask be suddenly landed on the ceiling—a monument to precipitancy for all time! When boiling is once under way there is no more danger of such an accident occurring, and ebullition should be maintained for some minutes before the precipitate is allowed to settle. Should it be found, after the calcium tartrate with the copper oxide have settled to the bottom, that considerable copper still remains in solution to be precipitated, it will generally be necessary to add from time to time, as the urine is run out of the burette, a few drops more of the calcium-chloride solution, as the freshly precipitated calcium tartrate has greater clarifying powers than that which has already been used. Should the amount of precipitate become finally very large, more water should be added to the flask.

By the use of this method a sugar determination may be made in twenty minutes, and several can be done together in even less time each; whereas, under the common method, half an hour would be very short and very exceptional, and an hour or more—depending on the nature of the specimen—nothing unusual.—*New York Medical Journal*, July 7, 1888.

ELECTRICITY IN UTERINE DISPLACEMENTS.—In an article on this subject DR. A. LAPHORN SMITH, of Montreal, writes of the details of this method as follows:

First of all a precaution is very necessary, but not more so in this than, in the light of present experience, is the case in any other manipulation

about the genital canal, viz., to irrigate the vagina with a 1:40 carbolic or a 1:5,000 sublimate solution. If the latter be used as the disinfectant, I would recommend the operator to imitate a little knack, which Apostoli has, of depressing the perineum with the little finger afterwards, in order to empty the seminal lake or cavity of the vagina, which I have frequently known to hold several ounces of fluid. The observance of this precaution has saved me from any fear of mercurial poisoning, although I have made many hundred irrigations.

The apparatus required is as follows: a faradic coil made on purpose for this work. The wire must be very short and very thick, because what we want is a current of quantity. A long fine wire holds back the electric current, owing to friction or resistance, and consequently furnishes a current of tension, which is the current par excellence for relieving pain. A faradic coil, therefore, which is neither long nor short, neither coarse nor fine, is quite unsuitable for treating displacements. The instrument used by Apostoli, manufactured by Gaiffe, contains two such bobbins which can be used at will with the same primary coil, which latter, he never uses. These boxes also contain two small bisulphate of mercury cells, which are strong enough for an odd case that you may see at her house, but which is altogether too weak for office or hospital work where it is better to use two or three Leclanché cells to be reserved for this purpose only. With regard to the number of interruptions, the less rapidly they succeed each other the better, for we should aim at giving the muscular fibres time to relax after each contraction, rather than to throw them into a condition of permanent spasm. Every time a muscle contracts it develops, but if the contraction continues too long without a rest, it becomes exhausted.

Besides the apparatus for generating the proper current, the only other instrument necessary is the electrode or exciter. Tripier was in the habit of employing a monopolar exciter, the circuit being closed on the belly, above the pubis, by two large tampons of gas-retort carbon, covered with wet chamois skin. Apostoli uses a bipolar exciter, either large for the vagina or thin for the uterus, in which the two poles terminate about an inch from each other at the end of the instrument, and for which he claims the following advantages:

1. Doing away with the cutaneous pole.
2. Concentrating on the uterus (and its ligaments) the whole of the electrical action.
3. The operation is easier, and does not require the assistance of the patient nor any one else to hold the tampons.
4. The operation is less painful on account of the current not passing through the skin.
5. The operation is stronger and more effective, on account of the possible increase of the uterine

contractility, the facility being given of employing, although with less pain, a much stronger current, with the result that it is more curative.

I have just said that the bipolar exciter may be either vaginal or intra-uterine, and it may very properly be asked in what cases would you use the one, and in what cases the other.

The answer naturally follows from what I have already said as to the nature of the uterine displacements. In flexions, or as I would prefer to call them, deformities, the uterus itself is relaxed, and requires to be put through a course of gymnastics in order to make it hold itself up on itself, and the intra-uterine exciter should be employed. In versions and prolapsus, the muscles of the perineum, vagina, and the so-called ligaments are at fault, and they can be made to contract merely by the application of the current to the vagina. Patients generally describe their sensation as a trembling in their inside, at first immediately around the exciter, but afterwards gradually spreading until the whole pelvis is included. This is effected by the tissues acting as induction coils, one layer being affected after the other. This reminds me of another precaution which it is well to bear in mind. If by any chance the current should suddenly cease to flow, or the instrument should drop out, the patient will experience a severe shock, due to the discharge of the induced electricity stored up in these secondary batteries. It is therefore, important to lower the strength of the current gradually, before terminating a séance, and to take good care not to let the electrode inadvertently drop out. If you do, you will not be likely to have a chance of doing it again on that particular patient.

The question may be very properly asked, whether the faradic treatment of displacements will ever fail us; and if so, in what cases. It is insufficient in those cases in which the displacement is due to abnormal weight of the uterus, when the weight consists of tissues other than muscle. For instance, in cases of areolar hyperplasia, in which there is an abnormal amount of fibrous tissue, the faradic current would be of no use, because there is no muscular fibre for it to exert its power upon. In these cases, what is wanted is a form of electricity which acts especially upon the trophic nerves; in other words, the continuous current. But in subinvolution, in which the overweight is entirely due to the presence of muscular tissue which should have undergone fatty degeneration and been absorbed, the interrupted current finds its most useful application. For here all that is required is a greater amount of contraction, in order to diminish the blood supply.

Another question which is often asked is: Is it important to employ one pole rather than another in the faradic current? The answer is no; for the direction of the current changes many

hundred times a minute, so that no matter how you connect the current, the effect will be the same. Moreover the two poles terminate in the same electrode.

Should we use a galvanometer while applying the faradic current? No. For the quantity of electricity, which alone the galvanometer is capable of revealing, would hardly be sufficient to deflect the needle.

How then can we judge of the amount of current to employ? Simply by consulting the feelings of the patient. Never give her more than she can bear.—*American Journal of Obstetrics*, June, 1888.

TUMOR OF THE SPINAL CORD; REMOVAL; RECOVERY.—We are slow in getting used to the idea that under proper conditions of precaution many tumors of the brain may be removed *en masse* with the gain of life, and not the losing of it; and now, further, we must grant that the spinal cord, that most inaccessible and inviolable of organs, may be laid bare of part of its bony covering—man may become for the time and in part an invertebrate—in order that it may be set right, not by the gentlest of manipulations, but by the surgeon's knife. At the concluding meeting of the Royal Medical and Chirurgical Society, which was held on Tuesday, June 12th, the most important paper of this session, from Dr. Gowers and Mr. Victor Horsley, was presented, relating in such detail as the novelty and complexity of the facts demanded a unique case of the successful removal of a tumor of the spinal dura mater from within the bony canal, and the complete recovery of the patient. At a previous meeting of the Society the patient, a private gentleman, an officer in the Merchant Service, had most willingly attended to show to all who cared to see them the proofs of what had been done to him, and to express his deep gratitude for the change it had made in his life. Since 1884 he had had a nearly constant pain under his shoulder blade, with long fits of agony that maddened him, as some of his friends said in all seriousness, and with no hyperbole or metaphor. He might well have been glad of some last straw to break his back, and bring him to an end; but science could break his back to more profit. After due consideration and explanation, Mr. Victor Horsley laid bare the spinal column from the third to the seventh dorsal vertebra, and cut off the fourth, fifth and sixth spinal processes with strong bone-forceps. He made his way through the laminae on both sides, and the still more obstinate ligaments subflava, slit the dura mater up the middle line, and laid bare the spinal cord. When the opening was first made the injury had been suspected, but the tissues were healthy. That the attempt should be abandoned was counselled from some quarters, but Mr. Horsley preferred to complete his task, removed

the posterior part of another superior vertebra, and there found this tumor of the dura mater compressing the cord. It could easily be shelled out of its deep bed, the wound was carefully closed and drained, and healed by first intention. Slowly the great power of nervous recovery showed itself, and the pain and paralysis disappeared. This is not easy surgery; and the many details, hints, and conclusions that find a place in Mr. Horsley's paper will need careful consideration when we receive it at length in print. It was more than a summer gathering of the Royal Medical and Chirurgical Society could do to discuss it; it must be left to take its permanent place among the forward steps of the progress of the healing art.—*British Medical Journal*, June 16, 1888.

LAXATIVES FOR FATTY HEART.—KISCH recommends the following;

R Pulv. rad. rhei,
Ext. aloes,
Ext. jalap, āā gram. 2
Pil. mass, q. s.

Make 30 pills.
S. One pill in the evening.

For anæmic patients:

R Ferri sulph. purv. - - - grams 3
Ext. aloes - - - - - " 2
Pil. mass. - - - - - q. s.

Make 30 pills.
S. One, morning and night.

If compensation is becoming exhausted digitalis may be added.

R Pulv. rad. rhei,
Ext. aloes aq.,
Pulv. fol. digital. āā grams 2
Pil. mass. q. s.

Make 30 pills.
S. One every 3 hours.

—*Internat. klin. Rundschau*, No. 10, 1888.

TREATMENT OF LUXATED CATARACT.—At the recent meeting of the Société Française d'Ophthalmologie GALEZOWSKI read an article on this subject, and drew the following conclusions:

1. Subluxated and luxated cataracts constitute a variety of complicated cataracts, and should be operated upon with the least possible delay, in order to prevent inflammatory accidents.

2. The best operative method for the extraction of luxated cataracts is the method with the simple flap, without iridectomy.

3. The incision should be made above, preferably, of medium size, and away from the corneal border.

4. The curette with which the luxated crystalline is removed should be comparatively large and concave in order to better seize a large cataract.—*Revue Générale d'Ophthalmologie*, No. 5, 1888.

HYPERPLASTIC CATARRH OF THE VOCAL CORDS.—At the meeting of the Berlin Medical Society on June 13, HEIMANN presented a woman suffering from this affection, especially at the anterior angle formed by the vocal cords. It was similar to the affection described by Stoerck under the name of blennorrhagia. The patient was completely aphonic. The nasal and palatine mucous membrane was atrophied. The anatomical alterations of this singular affection, said Heimann, are of the order of the laryngeal pachydermia described by Virchow.—*Bulletin Médical*, June 20, 1888.

AMYLEN HYDRATE AS A HYPNOTIC.—DR. GÜRTLER, of Königsberg (*Berliner klin. Wochenschrift*, No. 6, 1888), gives the results of its use in cases of alcoholism, epilepsy, morphinism, cerebral meningitis, spasmodic cough, cystitis, and other maladies. In these and other diseases he has found it act promptly and efficiently as an hypnotic.

The formulæ advised by Gürtler are as follows:

| | | |
|----------------|-----------|----------|
| Amylen hydrat. | - - - - - | 7 parts. |
| Aquæ destil. | - - - - - | 40 " |
| Syrp. rubi | - - - - - | 30 " |

or,

| | | |
|------------------|-----------|----------|
| Amylen hydrat. | - - - - - | 7 parts. |
| Aquæ menth. pip. | - - - - - | 40 " |
| Syrp. rubi | - - - - - | 30 " |
| Ol. menth. pip. | - - - - - | gtt. i |

Dose.—45 to 90 grains of amylen hydrate for an adult.

—*American Jour. Med. Sciences*, May, 1888.

ARTIFICIAL SUPPRESSION OF THE MENSES IN CHLOROSIS.—LÖWENTHAL records 23 cases in which artificial suppression of menstruation was of therapeutic advantage. The method consists in the injection of warm water (at not less than 49° C.), the patient remaining in bed. In a very few cases ice-water may be preferable. In 18 of Löwenthal's cases the patients had chlorosis; the other 5 included 2 cases of grave hysteria, and 3 of convalescence from exhausting diseases. In the last convalescence was cut short. The results of the treatment were satisfactory.—*Gazette de Gynécologie*, June 1, 1888.

ACTION OF VAPORS OF HYDROFLUORIC ACID ON TUBERCLE BACILLI.—GRANCHER and CHAUTARD conclude, from a series of experiments that (1) the action of vapors of hydrofluoric acid on the evolution of experimental tuberculosis is *nil*, (2) that the direct prolonged action of hydrofluoric acid on the tubercle bacillus diminishes its action, but does not kill it.

APOMORPHINE IN ACONITE AND BELLADONNA POISONING.—DR. BRADLEY reports, in the *British Med. Journal*, a case of poisoning by aconite and belladonna, in which 0.1 gr. of apomorphine was injected hypodermatically about ten minutes after the accident. Ether was injected to stimulate the heart. The patient recovered.

THE
Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5 00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 21, 1888.

THE ACTION OF DIGITALIS.

"The indications for digitalis in cardiac affections are not yet precisely laid down," said Fonsagrives in 1884, "and we must proceed by groping, advancing step by step, observing the effects produced." Another French clinician has said that digitalis is like an ink-bottle, though how, he did not say. "With it we may calm or provoke palpitations, we may cure or promote asystolism, we may produce cerebral hæmorrhages or embolism, we may provoke anginous attacks or increase their intensity; here it is a perfect diuretic, there it has no action on the urinary excretion," says HUCHARD, in a most valuable addition to the therapeutic literature of internal medicine, "*Quand et Comment doit-on prescrire la Digitale.*"

But before answering the questions, When and how shall we prescribe digitalis? it may be well to review briefly the physiological and therapeutic action of digitalis. That there is by no means a unanimity of opinion may be seen by the four theories as to the action of this drug: 1. Digitalis acts directly on the myocardium (Vulpian), by exciting it (Sanders), or by paralyzing it (Stannius, Orfila, Dybkowski, Pelikan). 2. It acts on the vessels and vaso-motor nerves (Hutchinson, Löderich, Legroux)—a theory that makes the primary action of the drug peripheral rather than central. 3. It acts on the nervous system. Traube is the chief supporter of this view, his third and last opinion being that the

slowing of the heart is not due solely to the action of digitalis on the trunk of the vagus, since after section of this nerve it does not retard the pulse. It must be admitted, then, that it acts on its peripheral end. 4. Digitalis acts at the same time on the heart and on the vessels.

The diverse opinions regarding the action of digitalis, says Huchard, are due to the fact that digitalis acts differently according to the species of animal experimented upon. Given to cold-blooded animals it arrests the heart in systole; while it arrests the heart in diastole in warm-blooded animals. Its maximum action is seen in frog, rabbit, and guinea-pig, and its minimum action in the snail and toad. We cannot draw conclusions from such contradictory results from the sound or traumatised animal to the sick human patient; nor can we conclude from the well man to the sick man, from a patient in a febrile condition to one without fever, or from a cardiopathy in its first stage to one that has become asystolic. All diseases, and particularly febrile diseases, change the conditions of absorption and elimination of medicines, and the doses prescribed, says Huchard, should be regulated and modified accordingly. If we give digitalis to a man with no cardiac affection, or to a patient with heart disease completely compensated, it is very difficult, even with large doses, to slow the heart's action or to cause diuresis. If we give it to an asystolic patient we cause rapidly and surely, with comparatively small doses, a considerable slowing of the pulse and increased excretion of urine. If we wish to act on the heart of a febrile patient and abate the temperature, we must use large doses of digitalis. In typhoid patients, for example, the necessity of increasing the dose in many cases is a proof of the slowness of absorption and elimination of drugs under certain circumstances. And what better proof can we have, asks the learned clinician, of the uselessness and danger of certain formulæ that indicate the invariable doses of drugs, without mentioning the variable conditions of absorption and elimination?

It has been said that digitalis acts differently in the first and third stages of a cardiopathy. Given a case of aortic disease in which the lesion is well compensated, or in which there is exaggerated compensation: here it is wrong to give digitalis, for even if the heart is slowed very

slightly, the diuresis produced is insignificant, and the heart may be excited instead of being calmed. But take this same patient in the hypotensive stage, and the drug that has produced no therapeutic results three or four months previously, now causes abundant increase of urine, and slowing, reinforcement and regulation of the heart-beats. In the first stage digitalis has possibly excited the heart; in the second it calms it. So the dictum of Bouillaud, that digitalis is the opium of the heart, or of Beau, that it is the quinine of the heart, is not absolutely true. The most that we can say is that it is a regulator of the whole circulatory system. The difference in the action of digitalis depends, on the other hand, a good deal on the dose employed. Even in the last century Withering said that it acts better in cases in which the pulse was feeble and intermittent than in those in which it was hard and regular; but he did not discern that while it is a sedative in large doses, it acts as a stimulant in small doses. We have thus a further proof that clinical physiology is superior to experimental physiology. It is clinical physiology that shows us that digitalis causes slowing, regulation, and reinforcement of the ventricular systole, and increased arterial contractility and tension. In pathological cases it becomes diuretic in an indirect way, and without exercising a primary action on the kidney. That it is absorbed and eliminated slowly its cumulative action shows.

The first phenomenon produced by digitalis is slowing of the cardiac beats, rarely preceded by acceleration. The heart may be excited by any motion, by emotion, by cough, but this is succeeded by slowing of the pulse when the patient becomes quiet. The digitalic pulse, then, is, says Huchard, mobile, variable, and unstable; whence the therapeutic rule, little known and less observed, *keep the patient quiet and at rest if you would get the maximum action of digitalis*. As already said, when digitalis is given to a well person or to one that has no cardiopathy, the slowing of the pulse is scarcely appreciable; but when given to an asystolic cardiopath the slowing is much greater, and in some cases the pulse may fall from 160 to 50 beats a minute. It should be remembered, however, that digitalis may make the pulse *appear* slow, while the heart is really not so slow. In estimating the action of the drug, therefore, the heart should be auscultated

while the pulse is palpated. Sometimes there are twice as many cardiac pulsations as beats of the radial pulse, showing the alternation of a strong and a weak systole, as may be seen by sphygmographic tracings.

Not only is the pulse slowed, but it is also regulated. Nevertheless, Lorain has shown that digitalis produces a sort of regular or rhythmical irregularity, by which two rapid pulsations are separated from the two following by a long pause. This is the bigeminal pulse of digitalis, which should not be attributed to the patient's malady. The pulse becomes stronger, fuller, more ample, more resistant under the finger, indicating increased arterial tension, shown on the sphygmographic tracing by a short and oblique line of ascension, with a rounded summit, and a long line of descent. The cardiac impulse is more energetic, and the præcordial impulse more limited and stronger—the hammer stroke. The first sound is more vibrating, sometimes followed by a transitory systolic souffle, which has been attributed to the irregular contraction of the papillary muscles. This digitalic souffle, however, should not be confounded with that of mitral insufficiency, which has disappeared under the influence of the progressive enfeeblement of the myocardium, and reappeared under the tonic action of the drug. At the same time and for the same reason the asystolic murmur of Parrot disappears from the tricuspid orifice, this murmur being due to functional insufficiency following parietic dilatation of the right ventricle. That the drug is having its effect is shown by repeated and successive measurements of the heart; the heart retreats, diminishes in volume, especially transversely in asystolics, which implies diminution of the auriculo-ventricular orifice.

Diuresis is the second phenomenon following slowing of the pulse; and digitalic diuresis has special characteristics: it appears on the second or third day after the beginning of the administration of the drug, and usually appears suddenly; it is like a urinary flood, which is maintained for eight or twelve days above the physiological quantity. Digitalic diuresis is distinguished from the diuresis caused by caffeine and strophanthus in that the latter drugs cause a progressive and continuous increase of urine. We all know that when diuresis appears there is diminution or disappearance of œdema, dropsy and congestion, and

the body loses in weight. According to Lorain the daily elimination of urea does not vary, whatever may be the quantity of urine excreted under the action of digitalis; Huchard says that it is increased, while Mégevand says that the urea is diminished.

It is scarcely necessary to remind the reader of the cumulative action of digitalis, or of the therapeutic rule: Digitalis should be prescribed in decreasing doses, and it should not be administered in large doses for more than four or five days. But with the cumulative action of the drug must be considered the accumulation of doses. As Gubler has said, digitalis does not penetrate immediately into the organs that it modifies; it may be held in reserve in the organism; its cumulative action is the storing of the drug in an organ (the stomach or intestine), the accumulation of dose is the storing of it in the organism. From this must be deduced the practical conclusion that drugs that have cumulative properties should be given, so far as possible, in liquid form.

To the ignoring of the facts mentioned must be attributed the greater number of failures with digitalis, and the majority of cases of digitalism, the dangers of which have been exaggerated. It is important to reflect that these disagreeable symptoms do not appear while oedema persists. While the drug cures asystolism, it may cause a kind of toxic asystolism. Among the disagreeable effects of digitalis may be mentioned a pseudo-angina, which must be distinguished from præcordial anxiety, and from true anginous attacks in subjects of angina provoked by abuse of digitalis. The most important of these effects, however, are those produced on the digestive tract. The precocious vomiting caused by digitalis is due to the topical action of the drug on the gastric mucous membrane; the later vomiting comes on in about twenty-four or forty-eight hours after administration of digitalis in large doses, and is caused by toxic action. The accidents from digitalis may dismay the practitioner, and deprive him of one of the most important therapeutic resources. Next week we will discuss the important question, How should digitalis be prescribed?

THE SALE OF FLY-PAPERS containing poisons is forbidden in Berlin, to others than apothecaries, by order of June 7.

WEAR AND TEAR OF THE PROFESSION.

DR. JOHN H. RAUCH has recently published some statistics on this subject, collected during the last ten years. The figures go to show that the wear and tear on the medical profession is underestimated, and that the active practice of medicine is less conducive to longevity than is popularly supposed.

The statistics are based on observation in Illinois, in which, during the last ten years, there has been an average of 6,000 living per annum, and the aggregate deaths have been about 800—an annual mortality of 13.3 per 1,000. The *personnel* of the profession in Illinois is thought to be fairly representative of the profession generally, since it is composed of about one-sixth of physicians of a large city, and the remainder of physicians of smaller cities and towns.

Of the 800 deaths the age at death and the cause of death have been obtained in 686 cases. Three tables have been prepared, the first showing the average number of physicians in Illinois living annually at grouped ages, and of all males in Illinois at the same ages; average number of deaths annually of each class, 1878 to 1887, inclusive. The second table shows the yearly death-rates per 1,000 of physicians in Illinois, of all males in Illinois, and of both sexes in the United States, at grouped ages. From an examination of the tables it is seen that, while the death-rate of physicians in Illinois for the first few years after entering the profession is lower than that of all males in Illinois, and greatly less than that of the whole population of the country; it increases beyond that of the former class during the decade from 40 to 50, and is greater than that of the latter class in the next decade. The inference to be drawn from this is that on entering the profession physicians form a selected class, since they have an advantage of almost 3 per cent. as compared with all males at the same ages—from 24 to 40—and of more than 50 per cent. as compared with the total population, both sexes, at the same ages. But as the wear and tear of practice begins to tell this advantage is soon lost, and during the four decades from 30 to 70 the mortality of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is 11 per cent. greater than that of both sexes.

The third table shows the principal causes of deaths of physicians in Illinois during the ten

years ending December 31, 1887. The following are the percentages: Phthisis 15.3, diseases of the lungs and respiratory apparatus 14.4, diseases of the brain and nervous system 13.1, zymotic diseases 10, misadventure and violence 9.4, diseases of the heart and blood-vessels 8.4, diseases of the stomach and digestive tract 6, Bright's disease 3.8, diseases of the liver and appendages 3.2, and enteric fever 3 per cent. These figures show the result of exposure, irregular hours, broken rest and mental anxiety. Phthisis, diseases of the respiratory apparatus (91 deaths from pneumonia), and Bright's disease caused 268 deaths—more than 25 per cent. of the total. It is seen that more than 13 per cent. died of diseases of the brain and nervous system (embracing 43 cases of the various forms of paralysis) as a result of mental strain and anxiety, insufficient, irregular, and interrupted sleep and similar causes. The group of zymotic diseases includes 5 deaths from diphtheria, 1 each from small-pox and yellow fever, and 8 from septic infection, contracted while in attendance upon patients.

There is a marked decrease during late years of the deaths from alcoholism, overdoses of opiates and narcotics, and suicide, possibly due to an amelioration of the conditions of life—better roads, better means of locomotion, increased comfort in living, and less strain upon the practitioner, particularly upon the country doctor. During the last ten years 12 deaths are reported as due to alcoholism, but 11 of these occurred during the first six years of the decade; of the 18 deaths from "overdoses of opiates and hypnotics" in the whole period, there has been but one during the past three years.

THE DEBATE ON ELECTROLYSIS.

On June 21st there was a very lively debate on "Electrolysis in the Treatment of Diseases of Women," in the Obstetrical Society of London, following the reading of papers by Drs. Steavenson, Lovell Drage, Gibbons and Shaw.

Dr. Steavenson would not admit, with some, that the electrolytic action of electricity was limited to its cauterizing properties, but advocated a more extensive use of electrolysis in those diseases of women in which caustics are more usually employed. While the apparatus was cumbersome, and its management difficult, to

those that could manage the apparatus electrolysis would prove a more efficient and elegant way of applying caustic than any other method. He maintained that this caustic action was true electrolytic action. Electrolysis, he said, certainly takes place at the poles, and he believes that it also takes place between the poles, in the substance of a tumor, for example. In regard to the use of electrolysis in erosions and catarrh, he had evidence to show that it is really a shorter method of cure than any other, and is a better local remedy than any caustic. So, also, urethral caruncle, he believed, is best treated by electrolysis, with cauterization of the raw surface left after removal of the growth. In order to be successful with the method the operator should be both a gynecologist and an electrician.

Dr. Steavenson claimed that not only will cicatricial tissue out of sight in the pelvic cavity disappear under electrolysis, but cicatrices at the meatus of the urethra also, and on the brawny tissue around old perineal and scrotal fistulæ.

Drs. Bantock and John Williams could not express themselves in favor of electrolysis, and the latter thought that "there might be a place for the employment of electricity in the treatment of diseases of women, but as yet no case had been made out for it." Dr. Champneys thought the discussion of the subject premature, and he was not convinced by any of the cases reported in the papers read. Dr. Galabin thought that as a caustic, electricity was valuable when the interior of the uterus required treatment and the cervix was narrow; in other respects it was scarcely superior to other caustic agents.

Dr. Playfair declared that they that had really mastered the technical details of electrolysis had never found the method useless. From personal experience he had sufficient evidence to satisfy himself that the agent had great power, but that much was yet to be learned. It might do harm if injuriously and unskillfully used, but that truth furnished no argument for rejecting electrolysis as a therapeutic agent, but rather demonstrated that the effects of the new method must be carefully studied, and its dangers detected and avoided. Dr. Inglis Parsons believed that electrolysis would prove successful in hæmorrhagic cases whenever the electrode could be made to touch the whole of the bleeding surface. Dr. Routh compared the opposition to the electrical

treatment of diseases of women to the similar opposition to the sound and to ovariectomy in past days. They that have no experience with the method cannot judge of its merits. Dr. Heywood Smith believed that electrolysis was of value in promoting the absorption of inflammatory deposits in the pelvis after the stage of active inflammation had passed away. The method should be systematically tried, in intractable cases of obscure pelvic pain.

Dr. Gibbons, while insisting that electrolysis as a means of curing fibroids deserves more trial, and will be better, if successful, than oöphorectomy or hysterectomy, said that the method gave promise in other directions; it should be carefully applied in obstinate, intractable affections like chronic metritis.

Dr. Shaw had satisfied himself by a series of experiments that electrolysis takes place between as well as at the poles. Some of the cases of failure, he says, are due to local irritation, the result of a too early or too vigorous use of the hæmostatic action of the positive pole. A preliminary or occasional resort to the derivative action of the negative pole seems to be advisable.

"SPECIALTY" ADVERTISING.

"Under the fostering care of the ethical rules of the American Medical Association," says the *Medical Record*, "there is growing in the West a practice of physicians advertising themselves as specialists in the medical journals." We have no means of knowing whether the specialists referred to are members of the American Medical Association or not. If there be anything in the ethics of the Association that would "foster" such advertising on the part of Western physicians, it would have the same effect on the physicians of the East; and our Eastern confrères will be slow to acknowledge that the Western members of the profession are ahead of them in anything. And if there be anything in the ethical rules of the Association that "fosters" such advertising, no one need fear that the Editor of the *Medical Record* would hesitate to point it out.

It may be said, however, that under the fostering care of no ethics of any kind, a surgeon of New York, who was connected with the case of the late Gen. Grant, and who has considerable connection with the *Medical Record*, manages to

have himself interviewed rather frequently by newspaper reporters, the interviews being telegraphed through the country as "specials," or sent out by the news agencies. Some months ago (early in December, 1887), this surgeon was interviewed on Scheurlin's bacillus of cancer, the interview being sent to the *Chicago Times* through Ford's News Agency, of New York, and being opened with the information that the surgeon in question was a high authority on cancer—the proof of "high authority" resting on his connection with the case of Gen. Grant. Since that time interviews with this surgeon on the case of the late Emperor Frederick III. have been published in the *Chicago papers*, and at the time of the meeting of the Association a Cincinnati paper contained a telegraphed item, the result of an interview, stating that this surgeon had been called by cable to attend the Emperor Frederick of Germany. Inasmuch as he did not go, however, the probability of the truth of the statement is so small as to be microscopic. In these interviews this surgeon has been frequently mentioned as "an authority on cancer." If one must advertise, is it not better to advertise in medical journals than in the daily newspaper? While unprofessional advertising in medical journals is to be deplored and discountenanced, it must be remembered that only a few are so fortunate as to count reporters and interviewers among their friends; a species of good fortune that may be due in some cases to the fact that the much-interviewed medical man has at some time forcibly injected himself and his services into the case of a sick man with a National reputation.

The ability to be interviewed is frequently more than a capacity—in some cases it seems to amount to an intellectual faculty. Whether this faculty, like the poet, *nascitur, non fit*, we will not pretend to say. But it is certain that some really great men are wanting in this faculty. For example, we do not remember that we have ever seen anything that would go to show that the consultants in the case of President Garfield attempted to make capital out of their connection with that celebrated case; nor have we ever heard such a thing intimated. We do know that Dr. Agnew incurred the dislike of many a newspaper man because he resolutely refused to be interviewed. We see, therefore, that while all men in this country have

equality conferred upon them by the Constitution of the United States, Nature decrees that there shall be differences in individuals.

It is still unsafe for a person living in a glass house to throw stones.

EDITORIAL NOTES.

DR. GEORGE VON ADELMAN, the well-known Professor of Berlin, is dead.

DR. FRIEDRICH WILHELM HAGEN, Director of the Lunatic Asylum at Erlangen is dead.

DR. ADAMKIEWICZ, of Cracow, has received a silver medal from a Society in Amsterdam for his researches on peptone.

PROFESSOR VIRCHOW has been awarded the gold Boerhaave Medal for Anthropology by the Scientific Society of Haarlem.

VON BERGMANN exhibited at the late Congress of Surgeons a patient whose intestine he resected four years ago for carcinoma.

A NEW POISON BOTTLE, shaped like a coffin, and made of blue glass is the invention of Mr. O. C. Holt, of Manchester, England.

AN INTERNATIONAL PHYSIOLOGICAL CONGRESS will be held in Paris next year, under the auspices of the Société de Biologie, and under the Presidency of Brown-Séquard.

THEOPHYLLIN, a new alkaloid of tea, is the recent discovery of Professor Kossel, of Berlin. It has the composition $C_7H_8N_4O_2$, is isomeric with theobromin and with paraxanthin, but differs from these substances by its reactions. When a methyl group is introduced into theophyllin the latter is converted into caffeine, and as E. Fischer has proved this to be a trimethylxanthin, theophyllin is evidently a dimethylxanthin. Physiological experiments with theophyllin will be made.

PARTHENICINE, an anti-neuralgic and antiperiodic, it is claimed, is described by DR. CARLOS J. ULICHI, of Cuba. It is obtained from Parthenium hysterophorus, of the Syanthorous division of the compositæ. The alkaloid occurs in large rectangular prisms, with four sides terminating in pyramids, has no smell, a bitter taste, is slightly soluble in boiling water, alcohol, ether, and chloroform, and gives a characteristic green color with sulphuric acid and potassium bichromate.

THE SOUTH AMERICAN SANITARY CONGRESS, which recently met at Lima, was held for the object of establishing an international sanitary system among the South American States, with a view of checking the development and spread of infectious disease, especially cholera and yellow fever, and including plague. The plan provides for intelligence offices in each country, from which information will be sent out. The time of quarantine in case of cholera is to be 8 days, and 10 days in case of yellow fever. Ports are to be closed under no circumstances.

A PAD FOR A FRACTURED CLAVICLE has been made by Mr. G. E. J. Greene, of England. It consists of an irregularly shaped crescentic pad, concave on its under surface, and grooved so as to lie easily on the clavicle. A strap is attached to both ends of the pad, one of which passes over the shoulder on the injured side to be attached to the other, which is brought out under the opposite axilla. A third strap passes down from the convex border to be buckled to a belt at the waist. This splint, it is claimed, is easily applicable, maintains fractures and dislocations in perfect apposition, without undue pressure, and ensures comfort. The patient can be dressed and go about.

CARBONIC-ACID SALINE SOLUTIONS.—M. L. JACQUEMAIRE proposes the forcing of carbonic acid into saline solutions, and bottling them like soda-water, so that they will keep without developing microphytes. A pressure of 4 or 5 atmospheres is used, the bottles being specially manufactured to resist this pressure. Of course most of the gas escapes when the bottle is opened, but carbonic acid being soluble in its own volume of water, enough gas will be retained to keep the solution clear for about a month, Jacquemaire claims, even when the bottle is opened four or five times a day. He experimented especially with solutions of lactophosphate and biphosphate of lime, pyrophosphate of ammoniocitrate of iron, peptone and pepsin. The antiseptic agents sometimes added to salt solutions are undesirable, but carbonic acid is always harmless.

BARIUM AND DIGITALIS, as has been found by DR. A. BARY, of Dorpat, are somewhat similar in their actions on the heart. It was found that in small doses chloride of barium increases the action of the heart muscle, and in large doses sets

up peristaltic movements, finally arresting the heart in systole, this arrest being a tetanic spasm of the cardiac muscle, being brought to an end by muscle-paralyzing agents and by mechanical distension by fluid pressure, but by neither electricity nor by atropin. Arrest of the heart caused by muscarin and chloral ceases under use of barium chloride. In small doses barium slows the pulse of warm-blooded animals independently of the inhibitory apparatus. In large doses it first accelerates the pulse (by stimulating the accelerating nerve?), and then slows it, by causing cardiac weakness. It generally increases the blood-pressure. It increases the secretion of the saliva, when injected into the veins, this secretion being checked by atropin. In this respect its action differs from that of physostigmin, though in other respects their actions are somewhat similar.

ALBUMINURIA IN THE UNITED STATES.—At the ninety-seventh annual meeting of the Connecticut Medical Society, DR. G. R. SHEPHERD presented an elaborated statistical report on albuminuria, compiled from examinations made on supposed healthy men. The following general conclusions were drawn: Albuminuria is much less frequent in the United States than in England, Stewart giving 31 per cent. as the general average, while ours, conducted on a much larger scale, show but 2 per cent. 2. The brain-workers, rather than the muscle-workers, show the largest percentage of albuminuria. 3. The urine of perfectly healthy people rarely shows albumin after food, while those who suffer from albuminuria and oxaluria are very liable to show it. 4. Privation, scanty food and clothing, with insanitary surroundings, increase the liability to albuminuria. 5. Cold bathing does increase the liability to albuminuria, though more notably so in the case of dyspeptics. 6. Severe exercise increases this liability in a very moderate degree. 7. In the large majority of cases albuminuria is not associated with kidney disease. 8. In the matter of life insurance albuminuria should be looked upon as a symptom only, and acceptance or rejection of the risk should depend on the gravity of the cause. 9. The existence of any such condition as physiological albuminuria is extremely improbable.

In consideration of the sweeping character of conclusion No. 7, it should be explained what is meant by "kidney disease."

SOCIETY PROCEEDINGS.

GYNÆCOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, April 20, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

(Concluded from page 65.)

Conclusion of Dr. W. W. JAGGARD's paper on
CONSERVATIVE CÆSAREAN SECTION.

Pelvimetry.—Dr. R. P. Harris writes in a recent communication to the *Medical News*, March 31st, 1888: "What is wanted now is a better acquaintance with pelvimetry, and the steps of the improved operation, as it is performed in Leipzig, Dresden, and New York." No one doubts the truth of this proposition. The notion of pelvimetry generally entertained is obscure and confused in the extreme. Dr. E. C. Dudley informs me that a few weeks ago he encountered a case in which a wife, desirous of becoming a mother, confessed to the practice of the prevention of conception through a period of ten years, under the advice of two distinguished practitioners, upon the ground of alleged contracted pelvis. Careful measurements revealed the fact that the pelvis was unusually large. The woman has since become pregnant. Many of the cases of Cæsarean section recorded in American annals are rendered well-nigh valueless for the purposes of comparative study by the omission of accurate pelvic measurements. The exact determination of the size and form of the pelvis constitutes one of the most difficult problems in obstetrics. A survey of the enormous mass of literature upon this subject fully confirms this opinion. As an excellent critical, historical review of the subject, I beg to recommend the monograph¹ of Dr. Felix Skutsch. While all methods of pelvimetry fail to yield absolutely accurate measurements, and our notion of the pelvic anomaly in the concrete case must be inexact to a degree corresponding, still the diameters and dimensions just mentioned are amply sufficient to establish the probable diagnosis of the shape and relative size of the pelvis in the individual case of the more usual types of deformity, and to afford data for comparative study, and ground for action.

I append the corresponding normal diameters and dimensions as given by Carl Braun and Schroeder:

| | | |
|--|-------|----------------------|
| Distance between anterior superior spinous processes | - - - | 26 cm. |
| Distance between iliac crests | - - - | 29 cm. |
| External conjugate diameter (Baudelocque) | - - - | 20 $\frac{3}{4}$ cm. |

¹ "Die Beckenmessung an der lebenden Frau." Jena, Gustav Fischer. 1887.

DR. C. T. PARKES: As I was present at Dr. Etheridge's operation, I should like to say a few words in regard to some of the impressions made upon me by the operation. First, in regard to its severity: so far as my experience goes with disease or injury affecting the abdominal cavity, I am sure I have been through cases quite often that would give me a great deal more anxiety, and be found more troublesome to manage than the doing of this operation. It struck me as being a very simple operation, at least to any one who is accustomed to having anything at all to do with the abdominal cavity. In the first place, the uterus is so large and it fills up so much of the cavity of the abdomen, that all the other viscera are out of the way, as was beautifully illustrated by Dr. Jaggard; there was nothing to be seen when the abdominal cavity was opened except the uterus, and it was very easy for the surgeon to open it. It was one of the easiest things imaginable to get the contents of the uterus out. So far as the flow of blood was concerned, I did not think there was any great amount of blood lost, considering the tissues divided and the size of the vessels cut. The gush is at first rather astonishing, but after a little time there is a rapid cessation of the bleeding. The bleeding in this case was very readily controlled by compression, and it did not strike me as being hurtful to the patient. I am quite sure she did not show any of the signs that are so often present when a large amount of blood is lost in other parts of the body. I am sorry that a complete post-mortem was not made after the death of the patient because I was very desirous of seeing the result of the manner of suturing that was adopted, because it struck me as being very safe. After the suturing was done, the wound was perfectly dry in every way, and after this part of the work was over and the operation done, with the exception of closing the abdominal wound, no sponging was required. There seemed to be no trouble in keeping everything out of the abdominal cavity, either amniotic fluid or blood.

Another point struck me in this case, not directly in connection with Cæsarean section, but as interesting in obstetrics. I have always been taught and always supposed that, during the development of the uterus in the latter stages of pregnancy, all parts were dilated, that the cervix was opened out and became part of the body, that it was thinned out so that the cervix and body became continuous, but to my astonishment, when the body of this uterus was exposed, the cervix was perfect in shape and retained the same relation to the body as in the normal state. There did not seem to be any losing of the cervix in the body by dilatation.

DR. J. C. HOAG: With regard to the technique of the operation, I remember to have read that on one occasion, when there was quite profuse hæm-

orrhage, and where retraction and contraction did not take place after the operation, the operator was bold enough to keep the uterus open for an hour and a half, keeping it packed with ice, and that the patient made a good recovery. I have also noticed somewhere that some operator has suggested the advisability of putting in a few sutures in the abdominal wound previous to incising the uterus, so that after removing the child the walls might be drawn together somewhat, and thus aid in the prevention of accumulations in the peritoneum.

DR. CHARLES WARRINGTON EARL: I would like to ask Dr. Etheridge one question: Were you able, in the time at your command, to make any effort at trying to find, through the incision in the abdominal wall, the nature of that obstruction below? You knew there was a fluctuating tumor there, did you examine it at the time of the operation?

DR. ETHERIDGE: I did not. I was so anxious to close up everything and get it out of the way that I did nothing of the sort. I was very greatly disappointed in our inability to secure a post-mortem examination. The next morning when I reached the hospital, about half-past nine, the body had been taken away, so that that part of it will always have to remain obscure. In regard to doing the other operation of opening the abscess and letting the discharge come away from it, I can say this: I have my doubts as to the possibility of saving the woman under the circumstances, from the fact that the pelvic cavity was not sufficiently enlarged by the evacuation of the tumor to admit of pulling the child through. This still constitutes, in my mind, an imperative objection to opening the tumor before the attempt at Cæsarean section.

DR. W. W. JAGGARD, in closing the discussion, said he was grateful to the Fellows for the kind attention given to his paper. He thought Dr. Parkes' notion of Cæsarean section as expressed in his own words, was erroneous and calculated to mislead. The *technique* of the operation is apparently simple, but the dangers of shock, hæmorrhage, and sepsis are constantly present, and every minutest detail demanded the most critical attention. The terrible mortality of the operation with us in the United States abundantly demonstrates its formidable character.

DR. CHARLES T. PARKES read a report of
FIRST FIFTY OPERATIONS FOR OVARIAN TUMORS.

The mortality in these cases was 4 per cent. I shall attempt to group together, in a somewhat practical way, the deductions which come to my mind as the outgrowth of this amount of work. The attempts to secure asepsis—to surely save one's patient from the dangers of fermentation, suppuration, and decomposition of wound secretions—brooks no neglect of any kind, in the

items already mentioned. Nothing that is used or brought in contact with the patient should be allowed to pass without the closest inspection by the operator himself. The patient puts her life in the operator's hands, not in those of an assistant, and is entitled to the former's own care and attention to the smallest detail in the preparations of needles, forceps, and instruments of all kinds, ligatures, sponges, and dressings. Sponges should not be used the second time in abdominal operations, no matter how well they are cleaned.

The greatest diligence should be observed in keeping everything harmful out of the peritoneal cavity. Reference is made not so much to foreign bodies of large or small size, although such ought never to occur, as to the escape of the contents of the cyst into the cavity. The contents can usually be kept out of the peritoneal sac by making the cyst constantly expand the edges of the abdominal incision during the necessary manipulations, by careful pressure against the tumor by an assistant.

The ligatures used have always been of carbolized silk, and they have never given rise to any trouble. In the greatest number of cases the pedicle has been clamped, the tumor removed and the stump thoroughly cauterized down even with the clamp. Then the pedicle was sufficiently subdivided just below the clamp and ligated with silk, after which the clamp was removed and the stump dropped. I have never had, following this method, any bleeding, or been called upon to reapply the ligature, or fish up a stump out of the pelvis after it had been dropped, to stay hæmorrhage. It is the method used by Dr. Homan, of Boston.

The ends of a ligature just tied should not be used for the purpose of bringing the tied tissue into view for inspection, especially against using them to in any way steady or lift the pedicle.

My experience confirms the great worth and necessity for the drainage-tube in many cases. Cases with many vascular adhesions leaving extensive oozing surfaces seem to always require the drain. Many cases would undoubtedly do better with it, even in which the raw surface is not large. One is more apt to err on the side of leaving it out than of making use of it too frequently. It takes but little over-weight of absorption and elimination of even not badly contaminated fluids to upset a patient's easy recovery, which might have all been obviated by the use of a drain for 24 or 48 hours. I have not noticed much difference in its workings, whether it be of glass or rubber.

The abdominal wound has always been closed with the silk suture passed carefully and carried through the different layers of the abdominal walls, including the peritoneum. It does not seem that any more satisfactory method has been advanced. It is quickly executed, and absolutely

trustworthy in the vast majority of cases. Two of my cases have had ventral hernia follow, but I am inclined to think other things had something to do with the occurrence of the complication; such as too early assumption of the erect position, too free motion, and discarding the abdominal support too soon. In very thick, fat walls, the use of three or four button-stay sutures, introduced well away from the edges of the incision, is of great advantage in maintaining the parts in apposition and conducing to early and firm union.

In the after-treatment of the earlier cases, it was the rule to use the catheter to empty the bladder six hours after operating. Quite a number of the cases developed a troublesome cystitis and in some cases a urethritis, no matter what care was taken with the instrument or in its introduction. Of late it is not used unless absolutely required. The patient is induced to make earnest efforts at self-relief, and success generally follows these efforts, and cystitis has ceased to be a complication.

It has become my habit not to feel concerned about a temperature up to 101° Fahrenheit, coming during the first three or four days after an operation, if it be unaccompanied with unusual pain, headache, or anorexia. By securing a free action from the bowels by the administration of 5 grs. of hydrarg. submur., followed in due time by some saline cathartic, and urging the patient to partake freely of water, the temperature ordinarily drops to about normal in twenty-four hours. If, with a nearly normal temperature for several days after operation, it suddenly mounts to 100° or more, some complication is impending, and it must be sought for with great care. Latterly it has been a surprise to me how many of the cases go on to a safe recovery without the administration of any medicine. If sepsis is avoided the individual's own powers of repair seems entirely competent to combat other complications with the simplest of assistance. When the pain is a complication, rectal injection of the tr. opii deodorata, in full, free doses (30 drops or more), has always seemed to cause the least disturbance and accomplish the best results.

The internal remedies from which the best results have been obtained for the relief of tympanites are the spts. terabintha and tr. nux vomica; the former to allay gaseous fermentation and as an antiseptic; the latter acting probably as a stimulant to intestinal peristalsis. It has never seemed to me that much if any good was accomplished by the rectal tube. It is not my wish to advise against its use, for many operators believe in its efficiency and use it constantly.

Tympanites, like so many other complications when they come, is usually the result of septic infection, and is best dealt with by keeping the germs away from the patient before, during, and after the operation.

The fluid I am in the habit of using for purposes of washing or irrigation is plain distilled or boiled water, with the addition of a small quantity of carbolic acid, making a solution of a strength of about 2 per cent. It does not seem certain that the germicidal power of this solution is of much consequence, still it does not seem worth while to dispense with it entirely. In washing out the peritoneal cavity, if occasion requires, a strong solution of boracic acid is used, and has done its work harmlessly and satisfactorily. Of course, reference is made here entirely to ovarian tumors, pure and simple. Infected cases, with pus present and other harmful fluids, require more powerful antiseptics and assiduous care in getting rid of their presence by every known means.

It seems to be of paramount importance to institute such care of the patient as will most surely prevent, diminish, or overcome the occurrence of shock. After every severe operation, much can be done by the use of external warmth and also care during the progress, by keeping wet clothes away from the body. I am still convinced of the efficacy of morphia and quinia administered half an hour or so previous to the commencement of an operation.

It can scarcely be denied that the patients do best if little, or better still, nothing is put into the stomach for twenty-four hours or more. If introduced, the effect is merely to increase the disposition to vomit.

DOMESTIC CORRESPONDENCE.

The New Orleans Medical and Surgical Journal and the Louisiana State Medical Society.

To the Members of the Louisiana State Medical Society:

Gentlemen:—The undersigned respectfully direct the attention of the officers and members of the Louisiana State Medical Society to a matter of importance which was brought to our notice on the 11th of June, 1888, by one of our most venerable and active members. The eminent physician and surgeon asks:

"Have you read in the June issue of the *New Orleans Med. and Surg. Journal* the editorial strictures upon the last meeting of the Louisiana State Medical Society? How shall such ill-natured and scurrilous criticisms be met? What is demanded of physicians attending the meeting at Monroe; and how shall they meet the rude, unjust and unprofessional attack?"

The "ill-natured, scurrilous, unjust and unprofessional criticisms" alluded to are to be found in the June number of the *New Orleans Med. and Surg. Journal*, 1888, pp. 984-987, under the head

of "Leading Articles," and title "The Tenth Annual Meeting of the State Medical Society." The quotations from the "editorial" will be confined to such portions as will illustrate the animus of the editorial staff of the *New Orleans Med. and Surg. Journal* in its attempt to defame and destroy the Louisiana State Medical Society.

The editors of the *New Orleans Med. and Surg. Journal* say: "Although, as we stated in our last number, owing to duties from which there was no escape, none of our staff was able to be present at the annual meeting of the State Medical Society at Monroe, we gather from the official minutes of the recording Secretary, which we published, that the meeting was characterized by the same indifference, idleness and slipshod irresponsibility that has for years made the Medical Society of Louisiana a disgrace instead of a pride to the profession of the State" (p. 984).

"A meeting of the Medical Society of any one of our sister States means the assemblage of all the best and wisest members of the profession, to consider well digested plans for the advancement of our interests, and the regulation of our conduct; to hear and discuss the latest and most valuable contributions that they are able to offer for mutual help and profit. *A meeting of the Louisiana Medical Society is the straggling together, in some locality, of a dozen or so of languid, inconsequent, unprepared medical men, bent for the most part upon a few days of rest, cigar-smoking and story-telling.* . . ." (p. 985).

"It is in no captious spirit that we write these lines, but it must have become apparent to every earnest man that the Louisiana State Medical Society should either undergo a great awakening and revivication, or be abandoned, cleared away as a useless time consumer and cumberer of the earth" (p. 987).

It is evident from the preceding quotations that the editorial staff of the *New Orleans Med. and Surg. Journal* have, without provocation and without warning, attacked not merely the body of earnest, laborious, patriotic and skilled physicians who assembled at Monroe on the 25th of April, 1888, but have endeavored, through the pages of their journal, to arraign the intelligence and medical attainments of the entire body of medical gentlemen composing the Louisiana State Medical Society. No honorable member of the medical profession objects to honest and courteous criticism, designed to advance the cause of science; but the wholesale abuse and slander of a medical society composed of two hundred gentlemen distinguished for their professional attainments and benevolent labors for the advancement of the highest and best interests of the citizens of Louisiana, should receive such brief, but decided condemnation as will place the authors in their true light before the medical profession.

We will consider this subject under two aspects,

namely: *First*, the relation of the editorial staff of the *New Orleans Med. and Surg. Journal* to the Louisiana State Medical Society. *Second*, the truth or falsehood of the statements of the staff of the *New Orleans Med. and Surg. Journal* with reference to the meeting of the State Medical Society in Monroe and elsewhere.

First. The relations of the editorial staff of the *New Orleans Medical and Surgical Journal* to the Louisiana State Medical Society. The following table has been drawn up from the record of the Louisiana State Medical Society, and from the *Medical Journal*, and shows that of the eight editors, seven are members of the Louisiana Medical Society, and four of the members have received appointments as members and chairmen of standing committees, and two of them have been honored with the position of Vice-President and one of them holds the position of Treasurer and Librarian.

| NAME. | ADDRESS. | Date of Graduation in Medicine. | Date of Joining La. State Med. Society. | Honors and Positions conferred by the Louisiana State Medical Society, and dates thereof. |
|---------------------------|--------------|---------------------------------|---|--|
| Geo. B. Lawrason, M.D. | New Orleans. | 1883 | 1884 | Member of Committee on Publication. |
| Henry Dickson Bruns, M.D. | New Orleans. | 1881 | 1884 | Annual Orator. Address delivered at New Iberia, 1886; Chm'n of Com. on Revision of Constitution and By-laws, 1886-87; member Com. on Scientific Essays, 1887-88; Com on Organization, 1887-88, on Necrology, 1887-88; Vice-Pres. 2d Congressional Dist Louisiana, 1887-88. |
| F. W. Parham, M.D. | New Orleans. | 1879 | 1879 | Treas. and Librarian 1885-88. mem. Com on Publication, 1886-88; Com. on Rev. of Constitution, 1886-87; Com. on Necrology, 1887-88; Com. on Organization, 1887-88; Vice-Pres. 1st Congressional Dist, 1887-88. |
| Jno. H. Bemiss, M.D. | New Orleans. | 1878 | 1884 | Member of the Committee on Publication. |
| P. E. Archinard, M.D. | New Orleans. | 1882 | 1885 | |
| A. McShane, M.D. | New Orleans. | 1882 | 1885 | |
| E. L. Bemiss, M.D. | New Orleans. | | | |
| H. W. Blanck, M.D. | | | 1884 | 1887 |

At the time of the meeting of the State Medical Society at Monroe, Dr. F. W. Parham held the position of Treasurer and Librarian and Vice-President of the First Congressional District, Dr. Henry Dickson Bruns held the position of Vice-President of the Second Congressional District, acting Chairman of the Committee on Scientific Essays, Chairman of the Committee on Revision of the Constitution, and member of the Committees on Organization and Necrology. Dr. Archinard was a member of the Committee on Publication.

The editorial staff of the *New Orleans Med. and Surg. Journal* have been honored and trusted by the Louisiana State Medical Society, and they have, when it suited their convenience, used the valuable reports and original papers read and presented by the officers and members of the Society to fill the pages of the *Journal*.

The most important matter for the action of the Society at its tenth annual session was the discussion, adoption or rejection of the revised constitution and by-laws, which had been printed in parallel columns with the old constitution in the Transactions of 1887. Dr. Bruns was the originator of this movement, at the New Iberia meeting, and the Committee consisted of Dr. H. D. Bruns, Dr. F. W. Parham, and Dr. A. B. Miles. Dr. Bruns was not only absent from the meeting at Monroe but, as far as our information extends, failed to address an official communication to the Louisiana State Medical Society explaining his failure to appear.

Whatever may be the limits of the circulation, or the professional standing of a medical journal, it should be borne in mind that it is an integral portion of the medical press of the country, and through its exchanges reaches far and wide for good or for evil.

If the "*Medical Society of Louisiana has been for years a disgrace instead of a pride to the profession of the State*," why did the editors of the *New Orleans Med. and Surg. Journal* hold membership, enjoy its honors, and use its valuable papers to enlighten and benefit their subscribers?

If the condition of things described by the editorial staff of the *New Orleans Med. and Surg. Journal* really existed, why did not the editors have the manhood to denounce these evils in person, face to face with their fellow-members, and from the high positions to which they had been elected?

Was it just and right to use the medical press to abuse and traduce their fellow-members?

Does the holding of position in the great army of American medical editors absolve men from the ordinary rules and dictates of friendship and professional courtesy?

Second. The tenth annual meeting of the Louisiana State Medical Society, at Monroe, Louisiana, April 25 and 26, 1888.—The gentlemen comprising this assemblage were about equal in numbers

From the preceding record it is evident, first, of the editorial staff of the *New Orleans Med. and Surg. Journal*, not one has served in the ranks of the profession more than ten years; the stench, therefore, which the editorial of June, 1888, has created in the nostrils of many of the venerable and experienced members of the Louisiana State Medical Society, must be referred to the inexperience and enthusiastic caviling of youth.

to those assembled at New Iberia and Alexandria, the number of new members elected being 12 at New Iberia, 16 at Alexandria, and 16 at Monroe; total new members added to the Louisiana State Medical Society in 1886, 1887 and 1888, 44. The total number of permanent members to the meeting at New Iberia was 150; thus we have during the past three years an increment of nearly 30 per cent., or, more accurately, 29.3 per cent. When we reflect that the Louisiana State Medical Society had practically no existence until 1878, we must regard the steady increase in its members as proof that the medical profession in Louisiana regard its membership as an honor.

In medical attainments, earnestness, courteous and manly bearing, the medical gentlemen who assembled at Monroe, were the peers of the members of any similar gathering in Louisiana or any other State in this Republic.

The daily sessions were distinguished by careful and continuous scientific and executive labors, by harmony, and by courteous regard to parliamentary rules. The entire time of the sessions was devoted to the reading and discussion of papers, and the transaction of important business. The relative amount of scientific work accomplished may be seen from the following record of the past three meetings of the State Medical Society: Number of papers read at the New Iberia meeting, in 1886, 11; number of papers read at Alexandria, 1887, 16; number of papers read at Monroe, 1888, 14. Total, 41.

The character of the labors of the State Medical Society at Monroe will be shown to the medical profession in due time in the printed Transactions of 1888, which will vindicate the high attainments of the representatives of the regular medical profession.

The results of the meeting at Monroe are especially worthy of note when it is considered that the State of Louisiana had just passed through a heated political campaign, which had engaged the close attention and monopolized the energies of the citizens for several months; and when it is also remembered that Monroe is the most distant town from the large centres of population at which a meeting has been held, and is also comparatively inaccessible.

Louisiana suffered severely during the Civil War of 1861-1865, which overthrew her system of labor and destroyed the lives of many of her citizens. It was not until 1877 that there was any proper recognition by the Federal Government of the political and civil rights of a citizen of Louisiana.

With this change came the revival of the State Medical Society, and the little band of medical men, devoted to the advancement of the interests of the citizens and to the profession of their beloved State, has been steadily marching onwards, with the hope that they will, in time, enroll within

their ranks every honorable member of the regular medical profession, and gradually perfect and establish all measures relating to the elevation and protection of the medical profession of Louisiana.

It is not true, therefore, that "the Tenth Annual Meeting of the State Medical Society, at Monroe, Louisiana, was characterized by indifference, idleness and slipshod irresponsibility."

It is not true, therefore that "the meetings of the Louisiana Medical Society are the straggling together of a dozen or so, of languid, inconsequent, unprepared medical men, bent for the most part upon a few days of rest, cigar-smoking and story-telling."

Respectfully submitted,

JOSEPH JONES, M.D.,

Late President of Louisiana State Medical Society, Presiding Officer, Monroe, La., April 25 and 26, 1888, New Orleans, La.

J. J. Newton, Jr., M.D., President Louisiana State Medical Society, Bastrop, La.

Richard H. Day, M.D., Ex-President Louisiana State Medical Society, Baton Rouge, La.

T. O. Brewer, M.D., Chairman of the Committee of Arrangements for the Tenth Annual Meeting of the Louisiana Medical Society; and Vice-President for the Fifth Congressional District, Monroe, La.

J. D. Dupré, M.D., Ex-President Louisiana State Medical Society, Baton Rouge, La.

G. G. Belford, M.D., Bastrop, La.

Thomas Buffington, M.D., Baton Rouge, La.

T. G. Bridges, M.D., Bastrop, La.

W. R. McCreight, M.D., Bastrop, La.

T. M. Thornhill, M.D., Ex-Vice-President for the Fourth Congressional District, Arcadia, La.

J. M. Patterson, M.D., Arcadia, La.

W. O. White, M.D., Vice-President Third Congressional District, Abbeville, La.

J. C. Brown, M.D., Arcadia, La.

W. R. Aishman, M.D., President Vermillion Parish Medical Society, and other members of the Louisiana State Medical Society.

Transactions Ninth International Medical Congress Corrections.

Dear Sir: As THE JOURNAL seems the medium through which information will most promptly reach the largest number of readers of the Transactions of the Ninth International Medical Congress, I ask you to publish the following corrections:

Vol. II, page 34, line 9, for "equations ($1\frac{5}{26} + \frac{1}{6}$) $\times 2640 = 42240$," read, "equation ($1\frac{5}{26} + \frac{1}{6}$) $\times 2640 = 27,720$."

Page 39, line 20, for "*great* ration," read *given* ration."

Page 40, third line from bottom, for "*0.576*," read, *0.0576*.

Page 40, tenth line from bottom, for (Vide. p. 8) read, (Vide. p. 36).

Page 44, line 13, for figures on page 40, read "figures on page 41, viz. *N 17.—C 562 grs.*"

Page 47, Total Ration B., for "30. oz." read 30. 4 oz.

Your obedient servant,

JOS. R. SMITH,

Lieut.-Col. and Surgeon, U. S. Army.

St. Paul, Minn., June 27, 1888.

NECROLOGY.

A. Y. P. GARNETT, M.D.

GARNETT (ALEXANDER YELVERTON PAYTON), M.D., of Washington City, was born in Essex County, Va., Sept. 19, 1820, and died suddenly of heart failure, at the "Bright House," Rehoboth Beach, Delaware, on the evening of July 11, 1888. He was the son of Muscoe and Maria Wills Battle Garnett, who resided on a productive plantation near the Rappahanock River. One brother, an eminent lawyer, resides in Richmond, Va. As was the custom with well-to-do Virginians, when the doctor was a youth he was taught by private instructors, in his father's house. There he acquired a substantial education, including a knowledge of the classics and of French. Having selected medicine as a profession, and having read over the text-books, he attended the usual course of Lectures at the University of Pennsylvania, and received therefrom the degree of M.D. in 1841. His thesis submitted to the faculty on the occasion was on "Extra-uterine Gestation."

Shortly after obtaining his degree he presented himself before a Board of Naval Surgeons, and having passed a satisfactory examination, was commissioned an Assistant Surgeon in the U. S. Navy. In a few years he was promoted to Post-Assistant Surgeon. After serving for five years at sea in different parts of the world, he was stationed at the Navy Yard in Washington. Having married and desiring to be with his family, in 1848, he resigned from the service, and began practice in Washington. In 1851 he was enrolled as a member of the Medical Society, of the District of Columbia, and also a member of the Medical Association of the D. C. the same year. He joined the Pathological Society about the same time, and in 1852 he was elected its secretary. In these he held in succession the various offices, including that of the presidency. In 1852 he became a member of the American Medical Association, an organization to which he was much attached, and attended its meetings in 1853, 56, 68, 70, 76, 81, 83, 84, 85, 86, 87 and 1888. The last year he

was the president-elect and presiding officer, and delivered on the occasion of his taking the chair, a most able address.

Dr. Garnett was one of the original members of the American Climatological Society, and presented to it some able papers, and had one in course of preparation to be read at its next meeting. About 1858 he was appointed physician to the United States Penitentiary, which then and until after the war, stood at the foot of 4½ Street. The remaining parts of the old prison are now enclosed within the Arsenal or U. S. Artillery parade grounds. In 1858 he was elected Professor of Clinical Medicine in the National Medical College. Dr. Garnett "went south," as it is generally phrased, at the beginning of the war between the States, and, of course, vacated his chair in the medical faculty. During the Civil War he served as surgeon in the Confederate States Army, and was placed on duty in Richmond and had charge of two hospitals, and was at the same time a member of the Board of Medical Examiners for the Confederate Army. His professional ability, his character as a man, and his elegant address made him a favorite so that he was much employed as a family physician as well as sought after by the heads of the Confederate Government and officers on duty at Richmond. He was not only the physician and a valued trusted friend of Jefferson Davis, President of the Southern Confederacy, but of Gen. Lee and his family, and of most, if not all the families of the Cabinet officers of the Confederacy. He remained at the post assigned him until the surrender at Appomatox, and a new order of things assumed control. The cause for which he started life and fortune was lost. But the Union was saved. With health shattered, but with a brave heart, he returned to Washington a poor man, to begin life, as it were, again. Dr. Garnett had, before the war, by his energy and devotion to his profession, acquired considerable property in Washington. His life estate on this was, as a matter of course, confiscated by the Government of the United States. He was, however, enabled after a time to repurchase a portion of his property, and in this way saved something from the wreck.

Some time after resuming his practice, he was elected to the Chair of Practice in the National Medical College which he filled with ability until he resigned in 1870, because of the increasing demand upon his time by professional engagements when he was elected Emeritus Professor, which position he held at the time of his death. He was always a well prepared, fluent, graceful and entertaining lecturer, because he was a constant and careful reader of the latest and best works available.

Dr. Garnett's practice in Washington, as it had been in Richmond, was largely among the élite,

Roan Mountain, Eastern Tennessee, C. J. Kenworthy, Fla.; Notes of Summer in Switzerland, Dr. D. B. St. John Roosa, New York; An Epidemic of Cerebro-Spinal Meningitis in Central New York; Dr. W. T. Ford, Utica; Further Contribution to the Study of Consumption among the Indians; Dr. W. Matthews, U. S. A.

A. L. LOOMIS, M.D., LL.D., President,
J. B. WALKER, M.D., Secretary.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION will hold its tenth annual Congress in Washington, D.C., on September 18, 19 and 20, 1888. The following is the preliminary programme:

1. Ten Years of Laryngology. Rufus P. Lincoln, M. D., New York.
2. Congenital Bony Occlusion of the Posterior Nares. Charles H. Knight, M.D., New York.
3. The Effects of varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve. Franklin H. Hooper, M.D. Boston.
4. Subglottic Laryngeal Enchondroma. E. Fletcher Ingals, M.D., Chicago.
5. A Photographic Study of the Laryngeal Image during the Formation of the Registers, and Production of Variations in the Pitch of the Singing Voice. Thomas R. French, M.D., Brooklyn.
6. Lupus of the Nose, Pharynx and Larynx. Samuel Johnston, M.D., Baltimore.
7. Imaginary Lingual Ulceration. George M. Lefferts, M.D., New York.
8. A possible Substitute for Tracheotomy and Intubation in certain Cases. Edgar Holden, M.D., Newark.
9. Antiseptic Nasal Surgery. Clarence C. Rice, M.D., New York.
10. A Case of Sarcoma of the Tonsil. Alexander W. MacCoy, M.D., Philadelphia.
11. A Case of Subglottic Chronic Stenosis of the Larynx cured by Dilatation. Frank Donaldson, M.D., Baltimore.
12. Internal Oesophagotomy. John O. Roe, M.D., Rochester.
13. The Treatment of Atrophic Rhinitis by the Galvanic Current. J. H. Hartman, M.D., Baltimore.
14. The Anatomy of the Nasal Chambers. Harrison Allen, M.D., Philadelphia.
15. Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by means of the Surgical Drill. William C. Jarvis, M.D., New York.
16. On Fixation of one or both Vocal Bands in the Phonatory Position (so-called Abductor Paralysis). F. Donaldson, Jr., M.D., Baltimore.
17. Residence at certain High Altitudes as a means of Cure for Laryngeal Phthisis. Clinton Wagner, M.D., New York.
18. Further Investigations as to the existence of a Cortical Motor Centre for the Human Larynx. D. Bryson Delavan, M.D., New York.

Besides the above titles which have been received to date, papers have been promised by Drs. Morris J. Ash, J. Solis-Cohen, John N. Mackenzie and Beverley Robinson; and by Dr. A. Gouguenheim, of Paris. A number have yet to be heard from. D. BRYSON DELAVAN, Secretary.

THE AMERICAN PHYSIOLOGICAL SOCIETY will meet in Washington, D. C., September 18, 19 and 20, 1888. The following is a preliminary list of papers:

1. Dr. G. Stanley Hall. On the Therapeutic and Forensic Aspects of Hypnotism.
2. Dr. G. L. Gooftale. On Enzymes Comparable with Papain, found in certain fruits of temperate climates.
3. Dr. H. P. Bowditch. On the Knee-jerk Phenomena.
4. Dr. W. P. Lombard. On the Nature of the Knee-jerk.
5. Dr. H. P. Bowditch. On the Effects of Varying Rates of Nerve Stimulation upon the Character of Muscular Movements.
6. Dr. C. S. Minot. Growth and Death.
7. Dr. C. S. Minot. The Cells of the Cortex Cerebri.

8. Dr. C. S. Minot. The Uterus during Gestation.
 9. Dr. H. N. Martin. On the Temperature Limits of the Vitality of the Mammalian Heart.
 10. Dr. H. H. Donaldson. Histological Changes Produced in Ganglion Cells by Stimulation.
 11. Dr. Isaac Ott. On Fever.
 12. Dr. W. T. Sedgwick. On the Distribution of Bacteria in Drinking-Waters and Public Buildings.
 13. Dr. W. H. Howell. The Origin and Regeneration of Blood Corpuscles.
 14. Dr. V. C. Vaughan. On certain Ptomaines.
 15. Dr. R. H. Chittenden. On the Physiological Action of Uranium Salts.
 16. Dr. R. H. Chittenden. On Myosin and certain of its Decomposition Products.
 17. Dr. R. H. Chittenden. On the Influence of Acetnilitide or Antifebrin on Proteid Metabolism.
- H. NEWELL MARTIN, Secretary.

A SANITARY CONVENTION and meeting of Executive Association of Health Officers will be held at Lindsay, Ont., August 14, 15 and 16, 1888.

Passes to Sturgeon Point Hotel will be presented to delegates. Morning and evening boats connect with Lindsay. A citizens' excursion to those attending convention will also be arranged. Sturgeon Point is already a favorite summer resort for tourists and health seekers. It is situated on Sturgeon Lake, twelve miles from Lindsay. Arrangements have been made with the Canadian Pacific and Grand Trunk Railways by which parties signifying a desire to attend will be provided with certificates at a fare and a third upon making application to

P. PALMER BURROWS,
Pres. Executive Ass'n Health Officers.

THE NEW YORK POLYCLINIC HOSPITAL.—The Faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital immediately connected with the college building. It will be opened for the reception of patients in October next.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 7, 1888, to July 13, 1888.

Major Calvin De Witt, Surgeon U. S. Army, leave of absence extended one month. S. O. 159, A. G. O., July 11, 1888.

Lieut. William B. Banister, Asst. Surgeon, leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 14, 1888.

Asst. Surgeon Wm. Martin, ordered to Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.

Asst. Surgeon E. W. Auzal, detached from duty at Marine Rendezvous, San Francisco, Cal., and special duty there, and ordered to the Naval Academy.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending July 16, 1888.

Surgeon P. H. Baillache, to proceed to Delaware Breakwater Quarantine Station as Inspector. July 6, 1888.

Surgeon C. S. D. Fessenden, leave of absence extended thirty days on account of sickness. July 14, 1888.

Surgeon George Purviance, to proceed to Chattanooga, Tenn., as inspector. July 6, 1888.

Surgeon H. W. Sawtelle, granted leave of absence for twenty-three days. July 9, 1888.

Asst. Surgeon W. P. McIntosh, to proceed to Galveston, Tex., for temporary duty. July 14, 1888.

Asst. Surgeon W. J. Pettus, granted leave of absence for thirty days. July 16, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 28, 1888.

No. 4.

ORIGINAL ARTICLES.

THE MECHANISM OF PNEUMONIA: AND ITS TREATMENT.

Read in the Session of Practice of Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1888.

BY W. C. VAN BIBBER, M.D.,
OF BALTIMORE, MD.

The two objects of this paper are, *first*, an inquiry into the initial causes of pneumonia; and *secondly*, the treatment of the disease.

In order to demonstrate what may be termed the "Mechanism of Pneumonia" in a manner deemed necessary for the purpose of this paper, a few words concerning the anatomical arrangement of the parts must be said.

First, as to the definition of pneumonia itself. Since the crepitant râle was discovered, and its significance explained, it has been believed by auscultators that pathological changes may occur on one side only of the dividing membrane or partition of the lungs, whilst at the same time, upon the other side of this membrane, there may, at the beginning of the trouble, be but little or no disease. It is further believed, that by means of this râle, the diseases on the one side of this partition in the lungs can be distinguished from those upon the other side.

The wonder of this achievement is all the greater, because this dividing or partition wall is neither thick nor straight, but ramifies in the most zigzag manner throughout the planes of the lungs in all directions. It is somewhat a stretch of the imagination to call it a wall or partition, as it is a microscopic picture, yet none the less effective to fulfil its intention. For the practical purpose in view it may be thus described:

When one takes a deep inhalation, the air goes towards the minute bronchi, and empties into the stationary air space which fills the alveoli and infundibula of the lungs. We know that the heart is beating, and that the minute branches from the pulmonary artery are winding around and around the partitions of these alveoli and infundibula in an interweaving and spiral manner: so that, upon this side (the air side), we have the air, and, to use a Saxon word, on "yonder" side we have the blood in its vessels—and we cannot strictly say on

yonder side either—because the intertwining, plaited arrangement of the vessels puts the blood on both sides.

It is this dividing wall, such as it is, which stands as a basis of the classification of the diseases of the lungs into two distinct varieties. These are diagnosed by different sounds and symptoms; and, notwithstanding the minuteness of the wall, they are, at present, treated upon entirely different principles, and with different remedies. It must be remembered, also, that the air from the outside, in all its variations of quality and temperature, is in communication with the blood on the inside only as it is contained in its vessels; and these vessels are arranged on the air cells, in a system of capillaries which, although not the most minute, are more numerous than in any other part of the body. It is the changes in these capillaries that are to be considered. When they are congested or inflamed; this is pneumonia.

There are twenty-five diseases of the lungs and air-passages now described. Seventeen of these are described as occurring upon the air-side or external to this partition wall; six as occurring across its border, or upon the inside of it; and in the remaining two, as the double nomenclature indicates, the wall membrane itself is involved in the disease with its adjacent lung substance on both sides. The lungs are therefore exposed to causes of disease from without as well as from within, and for this reason, it may be, their diseases, far above all others, are the most destructive to human life. The statistics of one of them alone (consumption) claims for it the first place upon the mortuary list, and for another, pneumonia, there is claimed the second place in the mortuary list, in some situations.

Nothing more need be said concerning the importance of the study of the disease now under consideration than that, for every man in this room over 65 years old, according to the statistics, if he dies of any acute disease, there are nine chances in ten that he will die of pneumonia. Hence the further study of this disease claims attention. It is generally admitted that there must be something wrong, in this country at least, about its treatment, its statistics or its study, because, it is said, there are now a greater proportionate number of cases, and a larger mortality, than there

were forty years ago,¹ and this is not the case in England. Should this indeed be the fact in our country, if now, in this paper, a deviation from the beaten road along which the disease has been observed so long should be attempted, so that it may be viewed from a different standpoint and approached in a new way, let us hope that some good may result; particularly if that way should fortunately prove trustworthy and direct.

The term "mechanism of pneumonia" has not hitherto been used by those who have described and explained the nature of this disease. The term has been used for other diseases of the lungs, as the mechanism of empysema,² etc. It is a good term, and may be used to convey something more than what is known as the etiology of the disease, and likewise something different from its morbid anatomy and pathological histology; indeed, it may stand intermediate between these two, in an attempt to connect them as cause and effect. By means of the term "mechanism of pneumonia" an attempt will be made to show, in a general way, how those different changes in the structure of the lungs are brought about which are recognized during life; which are demonstrated by the scalpel; are seen after death by the microscope; and are so minutely described by classical authors in their different departments. In order to do this, it is necessary to seek for the cause, or causes, which throw the blood from its natural healthy channels, and produce these effects, or changes. It is admitted that congestion of the capillaries is the first step in the process of pneumonia. It only remains, therefore, to show in what way this congestion may be produced. It will be admitted that if the *modus operandi* of the predisposing causes are made clear, viz., as to how they assist, and favor the production of pneumonia when they are brought into action by the exciting cause—then a study of this process may give many valuable suggestions in the management of this disease.

It may now be asked, What are really the exciting, and predisposing, causes of pneumonia? A better way of putting the question, however, at this time and under all the circumstances, may be, What are *not* the predisposing causes of pneumonia? In general terms it may be said, in the language of a modern author, "that all conditions which tend to impair the general health favor the occurrence of pneumonia."³ If this be accepted as a medical aphorism, then the etiology of pneumonia would comprise a long list, and one too endless to be used at present. Yet some selection of these causes must be made, and in doing so, those *only* that are admitted to be the most frequent will be considered.

Amongst the recognized predisposing causes of pneumonia there are four, which are quite different from each other, and each one of them must produce the same effect, viz.: congestion in the cap-

illaries, by a different mode of action. These are age, cold, malaria and alcohol.

What could be more different from one another than the four causes which have been enumerated? Two of them, at least, deteriorate the general health, each in its own way; but by what particular manner or mechanism, why, or how, any one, or all of them combined, become direct or predisposing causes of pneumonia, may be of interest to inquire, and to understand if we can.

As regards age, so much would have to be said for all periods of life, that it is impossible to treat of it now. It will be alluded to again in the treatment of the disease.

It is curiously doubted now by some of the most eminent physicians and pathologists, whether cold is as frequent a cause of pneumonia as it was at one time considered to be; or, indeed, whether it has any agency in causing the disease at all. This is, indeed, the great absorbing idea of the day, so far as this disease is concerned, and about which more must be said hereafter.

Fully appreciating the importance of pneumonia, on account of its increasing prevalence, its destructive crippling of health, and its large mortality, our American physicians are now quite dissatisfied with its present indefinite position, and the great desire seems to be to take it out of the catalogue of general diseases produced by common causes, and to rank it as a specific disease, having a bacterial origin. Croupous pneumonia is one of the most common diseases which affect the lungs. It is the type of all other classified pneumonias. Its symptoms, its course, its issues, are therefore very well known, and if *cold* be excluded from its causation we are more ignorant of its etiology than of any of its fellows. Yet, of it, one of the leading minds of the present day says: "Although several most trustworthy observations enable us to put down cold as its usual cause, this gives us no insight into the way in which the chill operates. For what has partial chilling of the skin to do with the inflammation of an internal organ?"⁴ But inasmuch as the bacteria of pneumonia has not yet been found, what will now be said, as a contribution to its treatment, will be confined to cold, malaria and alcohol, as its exciting and predisposing causes.

And first as to cold. When speaking of it, the phrase "taking cold" must not be confounded with the word *cold* when used as an adjective, as in designating a cold wave, cold weather, etc. In this sense the word *cold* is simply used as an adjective. But the phrase "*taking cold*," conveying the idea that a diseased condition, or a morbid action, is brought by this means into the system, is such an integral part of the nursery catechism that no one will be inclined to doubt the fact. It

¹ Rindfleisch—Path. Histology, vol. II, p. 7.

² T. Henry Green—Path. and Morbid Anatomy, p. 11.

³ Rindfleisch—Path. Histology, vol. II, p. 6.

⁴ Henry R. Hartsorne, M.D. Pneumonia Its Mortality and Treatment, p. 1.

is an expression used alike by physicians and patients: it is accepted as a truth amongst the earliest impressions of life; it has been felt by every one in their own persons, and is known as a phrase in every language, from the earliest to the latest. It is found in the Hebrew, Greek, Latin, and all written modern languages and, according to some good authorities, in the languages of our Indian tribes. When used in connection with pneumonia it will be well to be quite precise as to its exact significance, because, if "taking cold" does predispose to, or can directly cause this disease, it is surely well to hold on to the truth in this matter; for it is plain, if "taking cold" does produce it at all, it must accomplish it by some mechanism, or by some order of action. Practically, it is within the scope and bearing of the term "mechanism of pneumonia" to reason upon the process of "taking cold" somewhat in this way:

A patient, having been exposed in a cold place to a continuation of cold air, gets thoroughly chilled; and in this condition, by continuing to inhale the cold air, the already chilled blood in the pulmonary capillaries gets yet more thoroughly chilled by cold applied from without and within, until finally, at various points along the partition walls of the lungs the circulation, becoming slower, is at length checked, and a stasis, or obstruction, results in the network of capillaries, which are spread out so numerous over the air vesicles. These points of obstruction increase with each round of the circulation, until ultimately a large portion of the lung may become involved, and the internal or blood side of the membrane becomes more or less rapidly engorged—giving the first stage of pneumonia.

Notwithstanding the assertions of many to the contrary, yet, it is a fact, that almost every case of pneumonia that comes before the clinician, has a history of some exposure to cold like this, and there are some reasons why a process similar to this may be looked upon as a simple mechanism, or cause, by which the lung membrane can become engorged or blocked at the point in question. A few of the reasons why this may be accepted as a fact are as follows: In theory, at least, it is in accordance with the laws governing the circulation of the blood in the body; it is tantamount in effect to the law or doctrine once held by the profession concerning a spasm of the capillaries; it is plausible, and not contrary to reason. If the pneumonia does result from cold, it must do so by some mechanism. The parts are there as they have been described; the bronchial terminals, the alveoli, the infundibula, the intertwining arterioles and the numerous capillaries filled with blood; if these parts are quickly changed from a state of activity and health, to that of disease, by cold, how else can it have been done except by stopping the circulation in the capillaries in a manner similar to the one explained? Should this be asserted as

a doctrine, it would be a ready explanation for a diseased condition, concerning which there has been, and is yet, a controversy which seems to be interminable, and concerning which the wanted bacterial cause is not to-day considered a solution.

A celebrated pathologist of the present day describes what he calls "the initial steps of the textural alterations in catarrhal pneumonia as follows: "The alveolar epithelia swell," he says, "and produce a thick and continuous layer of protoplasm which is detached from the wall of the alveoli in transverse sections as a nucleated band. The individual cells then separate; the nuclei divide; and active corpuscular proliferation sets in: large spheroidal cells with vesicular nuclei are produced; these cannot be otherwise described than as epithelial elements; they proceed to fill the alveoli, spreading through the stagnant serum which these contain. The intensity of their corpuscular proliferation, the quantity of epithelial elements produced, determine the further course of the inflammation."

The mistake made in this description, from the point of view taken here, is, that these textural alterations are *not* initial. The mechanism of pneumonia, in order to be used to advantage as a basis of treatment, should have its starting point at least one step further backwards than the textural changes as they are described by Colberg; with an endeavor to show what caused the congestion. Whether this is cold or not, makes a decided difference in treatment. It may be a matter of regret that anything should prevent this explanation of the mechanism of cold in producing the engorgement of pneumonia, from being accepted, because a good system of practice can be built upon it; but there are two prominent points to be considered, both of which seem, at first, to be directly opposed to this view, but which, singular to relate, both of them, upon reflection, are really in its favor.

The first point is, that the cold air does *not* get down to the lung partition-wall so as to impinge upon and cool the capillaries. It stops at the stationary air space. The external air goes down the bronchial terminals, only to a certain measured calibre in the vessels, and there it stops; from that point to the partition-wall of the lungs the process of respiration is carried on by the diffusion of gases. This is a provision, which may have been made by nature, expressly to prevent this very accident.

The second fact is to be found in the general belief amongst physiologists, and not without good reasons, that it is hard to chill the blood in the internal parts of man, and especially in the lungs, by external cold.

In reference to the first fact, it may be said, the

⁶ Rindfleisch. Pathol. Histology, vol. ii, p. 15, where he quotes Colberg who believes that the alveoli are lined with epithelium; others do not

statistics of pneumonia, as they are now accumulated, show that this disease is much more common in our Southern States, than in the colder climates of our Northern States; and that this law maintains for colder and warmer climates throughout the world, so that, it is asserted, even in the extreme north the Eskimo are peculiarly exempt from pneumonia. The physiological working of the stationary air space, between the external cold air and the partition wall of the lungs would not only satisfactorily account for this point as a fact, but would render the assertion of the rarity of pneumonia in a cold climate, highly probable. Where the climate is cold the muscular structure of the bronchial tubes, which presides over the depth of the air space, regulates this matter automatically by a vital force, according to natural and preservative laws. On the contrary to this, where the climate is warm, there is a smaller development of muscular structure in the bronchia, and at the same time, a greater relaxation of the system generally, as well as of the delicate lung textures in particular. The lungs, therefore, expand more readily in the warmer climates and permit the air to pass unhindered lower down into the tubes and nearer to the pulmonary capillaries because the stationary air space is less. In this way the atmospheric vicissitudes that occur very suddenly in our Southern States, have many unguarded opportunities, especially at night, to cool the blood and block its circulation in the lung capillaries. On account of these two facts, if cold is the exciting agent, it might reasonably be expected that there would be a greater prevalence of pneumonia in the southern and warmer climates. But for the reasons already mentioned, the collected statistics, cannot in justice be used, as they have been, for an argument against the theory of the production of pneumonia by cold, according to the mechanism which has been advanced.

In treating of the second fact, viz: That it is hard to chill the blood in the lungs by external cold. It is to be regretted that no means are yet invented by which the temperature of the blood in the pulmonary capillaries can be registered. So far as the lungs are concerned anatomically, they are near the heart, and have a stream of warm blood constantly pumped into them. But there are no lack of illustrations to prove that the general mass of the blood may be reduced in temperature by cold applied externally, even by "chilling of the skin by cold;" cold baths, cold rooms, cold water beds, demonstrate this fact in the treatment of fever. All are familiar with the effect of cold on the function of the brain, and how ice bags produce torpor.

To these illustrations it may be added, that for a long time it was the popular, as well as the clinical belief, held steadfastly until recently, that

the agency of "taking cold" in causing pulmonary congestion was a fact established by long observation.

This completes what will be said concerning the mechanism of pneumonia by means of "taking cold." It now remains to show the way in which malaria and alcohol predispose to the same effect. The subject of bacteria will be treated separately, and in a paper by Prof. Wm. C. Welch, of the Johns Hopkins Hospital.

Malaria plays an important part in the statistics of the mortality of pneumonia. There are many kinds of malaria. It is a generic term. Sewer gas malaria in cities which has been asserted to produce pneumonia; house malaras in both city and country; ground malaria; overcrowding malaria, etc., in a great many varieties. But the only malaria that will be chosen for this demonstration is that great general malaria which occupies large districts of territory throughout the temperate and torrid zones, principally at elevations below 350 feet, and is found widespread in our country along sea-marshes and river bottoms; that malaria which produces chronic remittent fevers. The peculiar physiognomy and muddy complexion which this brings about, shows in each case the proportionate amount of textural changes which have been wrought by it. These textural changes are not always exactly the same in every malarial district, but they all affect the spleen, the liver, and the quality of the blood. The spleen is softened and enlarged, the liver is also enlarged, sometimes softened and again indurated,¹⁰ but always loaded with pigment; having the portal circulation obstructed. Geographically, this kind of malaria and pneumonia, according to the statistics of both diseases, increase progressively, going from the north to the equator. The manner by which this malaria predisposes to pulmonary congestion can be explained in a variety of ways involving more or less mechanical principles. The embarrassed portal circulation and the altered conditions of the blood, together with the marked debility which it produces in the vaso-motor nervous system, by weakening the heart and the muscles of respiration, are the principal factors from which the demonstrations can be made. Time prevents our entering into them more fully.

In what way, or more germane to our caption, by what mechanism, it may be asked, does the long continued habitual use of alcohol in excess predispose to pneumonia? The disease has been called the drunkard's pneumonia, and is a well-marked, well-known and a common disease. In our Southern States alcoholism and malaria often coexist in the same individual, and this is one of the principal causes for the large mortality of pneumonia in those States. The effect which alcohol produces on the liver and lungs has been

¹⁰ Loomis—System of Medicine. Pepper, *loc. cit.*
¹¹ Loomis—System of Medicine. Pepper, *loc. cit.*

¹⁰ Anderson and Fricke
¹¹ Spindelsch—Pathol. Histology vol. I p.

thus described by Prof. H. Newell Martin of the Johns Hopkins University: "All the blood which flows through the mucous membrane of the stomach goes straight to the liver before it is carried to any other organ in the body. This blood of course takes with it whatever it has absorbed from the stomach. It is therefore not strange that the liver often becomes diseased from a man's taking alcoholic drinks. They cause a great overgrowth of the connective tissue of the liver, giving rise to what is known as *fibrous degeneration*. The true liver substance is crushed and killed and what remains is a shrunken, hard, rough mass, well-known to physicians as 'hob-nailed,' or gin-drinker's liver." The action of alcoholic drinks on the respiratory organs is thus described by the same author: "Indulgence in alcoholic drinks often keeps the mucous membrane lining the air passages in a congested state. It thus increases the tendency to colds of the head and chest. There is also a peculiar form of consumption, which is rapidly fatal and is found only in drunkards." This is sufficient upon which to establish a mechanism of pneumonia from alcohol in excess. It will be seen that the circulation is obstructed by the "hob-nailed" liver, and although the organs may bear the strain, and naturally adapt themselves to the change for a time, yet ultimately the circulation is thrown quite out of its natural current and equilibrium; and the pulmonary capillaries, already in a chronic state of congestion from alcohol are easily excited by any other cause, as cold, to still further congestion, and pneumonia ensues.

It will not be necessary, in this presence, to say more concerning the "mechanism of pneumonia" from age, malaria, and alcohol. The structure of the lungs, and their functions; the circulation of the blood through them, and through the liver and spleen, have furnished suggestions to make the demonstration. It is admitted that the merest outline has been given here, but when these altered structures, with their consequences, are pursued, as they can be by the medical thinkers who are now addressed, the conclusions to be drawn from them will be perfectly clear. This mode of showing the production of pneumonia from its various causes, and by means of a mechanism from which it may grow; by which it is governed, and by means of which it may be treated, has been given as a contrast to the *indefinite* picture by which it is too often presented, and which may be largely answerable for its even still more indefinite treatment which has heretofore been offered. In every part of its literature, save one, there is a singular want of precision in the study of this disease. Attracted by the rich field which it offers for thought, less attention has been paid to its initial causes proper, and to the therapeutics flowing from them, than these points demand.

For practical therapeutic use, the presentation

of the disease must not begin with a description of its textural alterations, for this is like the commencement of a narrative in the middle of a story, or like the exhibition of half a picture. Its initial cause must be demonstrated and its therapeutics based upon that. While it is difficult not to be influenced by scientific medicine proper, often at too early a period; while there are those who may be too easily carried away by new theories evolved in the laboratory, it must be acknowledged, that sometimes the most useful man is one who does his best to stop the prevailing mortality of a disease by carefully availing himself of, and keeping loyal to, what is already known; combining with this that which may be reasonably expected in the future; and by avoiding theories far-strained, as well as false dogmas. An equally interesting point for the mechanism of pneumonia to grasp and study, would yet lie before us in the future, if a microorganism should ever be found to produce the disease. But this is not yet the case.

About seven years ago Klebs found what he called an ellipsoid coccus, and thought he had traced it to pneumonia. Since that time this microorganism has been studied by others who have variously called it the nail-shaped coccus, the pneumococcus, or the microorganism of pneumonia. Little is as yet known about it, but enough is suspected to make it the duty of a physician to medicate the air of a room in which there is a patient having pneumonia, as will be hereafter explained.

CONCLUSIONS FROM THIS PAPER.

1. The predisposing causes, as the name implies, do not produce pneumonia, *de ipso facto*, but before its commencement they have already worked such structural changes in the human body that upon further disturbance of the system a congestion of the numerous pulmonary capillaries is more likely to occur than any other diseased condition.

2. A study of these structural changes, wrought by predisposing causes, gives advantages both in advisory prophylaxis, as well as in treatment.

The following letter from Dr. Wm. C. Welch is a summary of what we know of the relation of bacteria to pneumonia:

My dear Doctor Van Bibber:—At your request I write you a short account of our knowledge concerning the relation of bacteria to the causation of acute croupous or lobar pneumonia.

Not much importance was attached to the results of bacteriological investigations of croupous pneumonia before Friedländer, in 1883, described and obtained in pure cultivation a bacterium which he found in the affected lung in a number of cases of this disease. This microorganism was described by Friedländer as a round or oval micrococcus, possessed under certain conditions of a capsule capable of being stained, and presenting the so-called nail-like growth in gelatine. Friedländer's pneumobacteriologists now classify it as a bacillus, was found to be pathogenic for mice and in less degree for guinea pigs

and dogs but not for rabbits. Inoculations of pure cultures into the lungs of susceptible animals produces pleurisy and *lobular pneumonia*, in rare instances *lobar pneumonia*.

The belief which prevailed for a time after Friedländer's discovery that his pneumo-coccus is, if not the exclusive, at least a common cause of croupous pneumonia has not been confirmed by later researches. It is found that the pneumo-coccus, or more properly the bacillus pneumonia of Friedländer, is not so readily identified by means of its morphological and biological properties as was at first supposed to be possible. Other bacteria have been discovered which can be distinguished from it only by careful and laborious procedures. Little reliance, therefore, can be placed upon much of the work apparently in support of Friedländer's views as it is not certain, or even probable, that the observations in many of the cases related to Friedländer's bacillus. However this may be it is certain that this bacillus cannot be demonstrated in many cases of croupous pneumonia, either in the pneumonic exudation, the sputum, or elsewhere. Even the advocates of the causative significance of Friedländer's pneumonia bacillus now admit that it is the cause of only a small proportion of the cases of croupous pneumonia. In *my* judgment it has not been satisfactorily demonstrated to be in any case the cause of genuine croupous or lobar pneumonia of *human* beings.

At the present time the chief interest in this connection attaches to another species of bacteria. This species is the micrococcus discovered by Sternberg, in 1880, in his own sputum, and found by him to produce a rapidly fatal form of septicæmia in rabbits—the so-called sputum septicæmia. To this organism Sternberg has given the name of micrococcus Pasteuri. Its relation to croupous pneumonia has been studied with especial fulness and care by A. Fränkel and by Weichselbaum, of whom the former designates the organisms as the micrococcus of pneumonia, and the latter as the diplococcus of pneumonia. In distinction from Friedländer's pneumo-coccus, this organism is sometimes called Fränkel's pneumo-coccus. This second pneumo-coccus—the micrococcus Pasteuri of Sternberg—is present in the exudation and the sputum of croupous pneumonia far more frequently than is Friedländer's bacillus. It is regarded by Fränkel as the sole cause of genuine croupous pneumonia, and by Weichselbaum as the usual cause, the latter author claiming that a small proportion of cases are due to Friedländer's bacillus. The micrococcus Pasteuri has been found as a pure culture in the exudation of cerebral meningitis complicating croupous pneumonia.

It must be admitted that the evidence in favor of the micrococcus Pasteuri being the cause of croupous pneumonia is *stronger* than that in support of Friedländer's bacillus, but it does not seem easy to reconcile with this evidence the fact that the micrococcus Pasteuri has been found in a variety of conditions not associated with croupous pneumonia, viz.: in the normal saliva, in lobular pneumonia, in cerebro-spinal meningitis, in acute endocarditis, and in otitis interna. If this organism be regarded as the cause of these various diseases as well as of croupous pneumonia, the croupous pneumonia loses much of its typical or specific character. Sternberg, Fränkel and Weichselbaum consider that the occasional presence in the normal saliva of the micrococcus Pasteuri is not an obstacle to admitting the dependence of croupous pneumonia upon this organism, but on the other hand renders clearer the etiological rôle played by the accessory causes of pneumonia, such as exposure to cold, bad hygienic surroundings, old age, etc. These accessory causes they urge bring into existence the necessary conditions for the invasion and multiplication of the pathogenic organism.

The two microorganisms which have been mentioned are not the only species of bacteria which have been found in the exudation of croupous pneumonia, but they are the only ones to which bacteriologists are inclined to attach etiological significance in the production of this

form of pneumonia. It is apparent that the evidence is not conclusive that either of the organisms is the infectious agent of croupous pneumonia, certainly no such evidence has as yet been presented as that which leads us to accept the tubercle bacillus, the typhoid bacillus, the cholera spirillum as the cause of the respective diseases in which alone each of these organisms has been found.

Yours very truly,

WILLIAM H. WELCH.

Baltimore, May 2, 1888.

THE TREATMENT OF PNEUMONIA.

This is a difficult subject to approach for many reasons. "Every new remedy almost is tried in turn for pneumonia. It is a disease particularly suitable to speculative medicine."¹ After reflecting upon the manner in which the subject might be presented, it has been determined to do so in a way different from that which has been ordinarily pursued. It is useless to bring prominently forward oft repeated principles of practice concerning which most physicians have long since made up their minds. The subject will be presented for judgment, and therefore reasons will be given for each point of practice made, no matter how trivial it may seem. The larger and the longer one's observation may have been in the management of this disease, the more he will be likely to appreciate, and to be attracted by, what may be termed, the elegancies of therapeutics. It is fatiguing to the mind to enter into the figures of statistics, and as this has been done so often, and moreover, as there are now no new and corrected collections to offer, let it be taken for granted, that those which have already been published, are sufficient; and that they are as correct as they can now be made; although, what can be proved from them, each one's judgment must determine for himself. The only claim which will now be made is that of forty-seven years of observation, and those who may have been co-observers for this length of time, or near it, will recollect that at that time, as it is at present, pneumonia was the disease of the day. It has always attracted attention, and upon its treatment most physicians have based their hopes for usefulness and their expectations for success. The extraordinary appearances of the pneumonic lungs which are presented for pathological demonstration and study, contrast so strongly with the physiological lungs, when displayed, that they never cease to excite wonder and to strike the mind with amazement and dread. No one can forget these appearances, and when a case of pneumonia is under care for treatment, the recollection of them returns, and the physician is burdened with an anxiety which few outside of our profession can estimate.

It has been determined to present the subject of treatment of pneumonia by means of four hypothetical cases. One—a child of eighteen months, or under two years of age. One, a youth twenty-five

¹ Fothergill. *Hand Book of Treatment*, p. 247

years old, of uncomplicated pneumonia. One case, sixty years of age, complicated with malaria, and one case, of seventy years old, complicated with old age, malaria, and alcohol. These four cases, it is thought, may sufficiently embrace the subject. These ages have been selected, because, according to the statistics, pneumonia is more common before 2 years of age—less frequent between 2 and 20—common again between 20 and 40—less frequent from 40 to 60—again common after 60. Making three distinct periods, early childhood, from 20 to 40, and after 60.¹¹

As the point in view is strictly treatment only, in these hypothetical cases, the diagnosis is supposed to have been already made, and the treatment to be commenced immediately thereafter.

Case 1.—An infant between 18 months and 2 years of age. *Directions:* The child to be protected in the best manner possible; to be put in bed, if it will remain there quietly, if not, it should be nursed in the manner in which it will remain most composed, but its position to be frequently changed, so as to prevent the settling of blood in its lungs. The room should be pleasantly shaded and kept quiet, warmed by means of an open fire, and kept at a temperature of from 68° to 70° F. in winter. Its clothing should be slit open in the back at the first visit, so as to get free access to the bare skin without trouble. Its diet should be diminished to one-third of its usual quantity of food. Modify its bath, its amusements and the use of its voice, and in all attention to it, have only the one nurse with whom it will be most quiet in the room. To cry, as well as to talk, is bad for pneumonia.

The question should be now determined what remedies will be used in this case of disease.

1. Commence with a gentle purgative—the transference of a slight irritation to the intestines is a good treatment. *Ol. ricini* is the best, and more easily given when skimmed off of warm, sweetened water, flavored with mint.

2. Antifebrin gr. $\frac{1}{2}$, in solution, in sweetened water; this is intended to gradually diminish the heat of the blood. To assist nature thus far, even with the advanced theories before us concerning the pneumonic fever, is a good practice; if the pneumonic fever runs too high, this will control it.

3. The muriate of ammonia $\frac{1}{2}$ gr. every four hours, to be given alternately with the antifebrin. This salt is better given in solution in weakened and sweetened spear-mint water.

4. Muriate of ammonia gr. 4 to an ounce of whisky, or bay rum. This is to be applied hot on a well fitted linen pad—3 x 4 inches—on the skin over the roots of the lungs, and to be covered by a flannel pad and a well fitted oil silk arrangement; also, the feet may be rubbed with the same solution, the object being to carry off the superfluous heat and thus produce sleep and quiet.

5. To medicate antiseptically the air of the room. Bromine, chlorine, iodoform, carbolic acid, or other substances, in solution, to be placed in the apartment, near the child; where such a medication of the atmosphere will be made most potent for its good. The breathing of a properly medicated atmosphere is the most powerful mechanical mode of treatment. It is as constant, and as long-continued, as life itself. The bromo chloralum, 1 part to 20, answers a good purpose.

6. Repeat the gentle purgative every second or third day.

7. Continue this treatment without intermission for seven to ten days.

Pure pneumonia, in an infant at this age, is frequent, and is sometimes the slightest, and again the most serious of diseases. The statistics, for all classes may be consulted, in order to prognosticate how many cases similar to the one here described may recover. Practically, we may say, that if these seven directions are fully carried out, in good faith, that at least eighty out of a hundred of those cases which occur in private practice, amongst persons in good circumstances, will be cured. This proportion presupposes that the treatment is commenced as soon as the crepitant râle can be detected. This is encouraging.

Case 2.—A youth, 25 years old—uncomplicated pneumonia. *Directions:* 1. To be put to bed at once and follow the same general directions for temperature, shading, and quiet of the room as in the first case.

2. The diet to be reduced one-third of the habitual amount of nourishment ordinarily used, and a proper selection of articles chosen to suit the occasion, but the amount of food should be proportioned to the area of lung involved, if possible.

3. The initial purgative should be a saline. An effervescing saline aperient is the best.

4. Medicate the atmosphere of the room at once.

5. Antifebrin gr. $\frac{1}{2}$ to $\frac{1}{4}$, or antipyrin gr. 4 to 40 in cool water, and mur. ammonia gr. $\frac{1}{2}$, in hot water, each given every four hours, alternately—one or the other every two hours.

6. Six scarified cups, drawing six ounces of blood, and six dry cups to be applied over the roots of the lungs, with a medicated poultice afterward applied to the cupped surface; when the irritation from the cupped surface has subsided, apply the pads wet with the muriate of ammonia and whisky or bay rum to the back. Renew the cupping every three days or oftener, if necessary, with half the quantity of blood drawn. Give the purgative every two or three days, to be given early in the morning preferably. Protect the chest and arms with warm clothing, a flannel Nightingale is the best.

7. Continue this treatment without abatement for sixteen days, so that all trace of inflammation in the lungs may be subdued.

¹¹ Loomis's System of Medicine. Pepper p. 314.

8. Medicate the air of the room thoroughly.

This latter is a case which would give more apprehension than the first one, because, as a rule, the older the patient, the more serious the pneumonia. This case, like that of the infant, is supposed to be a type case of uncomplicated pneumonia. Like the first one, also, it is supposed to have been recognized at the beginning of the crepitant râle, and immediately thereafter submitted to treatment; with these premises granted, the prognosis is favorable in both cases, and the recovery, by the treatment instituted, should be complete. But it must be emphatically said, for these two cases, that, had they not been thus early recognized and properly treated, the result would have been different; because, from the mechanism of the parts which make up the disease, and the function of the organs involved, it is evident that pneumonia is a progressive disease. It cannot safely be trusted to the efforts of nature amidst the ordinary accidents of life without a proper and a vigorous treatment. From its essential nature it must spread in the lungs if not cared for, and unless stayed, will mechanically get such a lodgement there, as to destroy life as an acute disease, or cause the patient to be an invalid from chronic structural changes.

Case 3. Pneumonia occurring in a patient about 60 years old, complicated with remittent malaria. This case is yet more serious than the other two: the increased age, and the deteriorating malaria, giving their disadvantages to the patient.

Directions. 1. The same general directions as in the first two cases as to rest, temperature and shading of room, exposure of back, extra warmth for arms and chest; but the flannel should be heavier than in the other case. Be still more vigilant about changing positions in bed, and have the cuppings always done whilst in the recumbent posture, and this can be readily accomplished.

2. The effervescing saline aperient. The after opening treatment, in one of this age, may be done by some of the saline mineral waters; they refresh the stomach, and acting as resolvents, actually increase the vigor of the system.

The malarial complication must be met by the administration of quinine. Hypodermic injection is preferred. Six grs. of the alkaloid, or a solution of the hydrobromate, should be injected three times a day for three days; the hypodermic solution of the hydrobromate of quinine is the best. On account of the advanced age a somewhat greater support should be given to the patient; and smaller cuppings must be ordered.

3. *Remedies.* If the temperature is high, give antifebrin somewhat according to the rules and observations of Dr. G. Walter Bart,¹¹ 5 to 15 grs. every four hours, alternately with muriate of ammonia grs. iij in hot water, also when the cupped

surface will permit, apply the muriate of ammonia solution 20 grs. to the ounce of whisky or bay rum, covered with the flannel and oil-silk pads, as before directed.

4. Medicate the air antiseptically. Upon this the greatest stress is to be placed.

5. Give the saline aperient water every second or third day.

6. Continue this treatment without intermission for from sixteen to twenty days.

This case is more serious than the others, and the statistics of mortality, for all classes, would give a large percentage of mortality for the class of which this is intended to stand as a type. The treatment, however, has been carefully selected, and if fully carried out in good faith, in private practice, amongst persons in good circumstances, it will be found that a large number recover.

Case 4. Patient 70 years old, complicated with old age, malaria and alcoholism. The number of years being given, and the term old age applied, presupposes that this latter is premature on account of the malaria and alcohol.

Directions. 1. The same general plan of treatment would be advised for this patient as it regards the appointments of the room, the clothing, the cupping, postural changes, etc.

2. The same remedies to be used, *i. e.*, the antifebrin, in capsules, the carb. ammonia—in place of the muriate—or alternating with it. Larger diluents of light mineral waters—the muriate of ammonia pads, the antiseptics of the air, the hypodermic use of quinine. The modifications to be made in this case are for the alcohol habit, and the age; these are important on account of the supposed long continued habitual use of alcohol—it cannot be suspended abruptly—but whatever preparation is selected to carry on the habit, it must be largely diluted with water; wine-whey, or weak whisky and water are the best.

In order to show the practical application of the plan of treatment which has been suggested, it will be necessary to recapitulate the articles and explain, somewhat in detail, the *modus operandi* of the several remedial means employed. The rest, warmth, postural changes and external applications, require no further mention. Much stress is laid on cupping over the roots of the lungs, between the shoulders, or more particularly still, between the third and eighth dorsal vertebrae, and for this reason. It will be remembered that the lungs are pedunculated organs. Together with the heart they can be taken from the body entirely by the severance of their roots. They are internal, but in another sense they are far removed organs; the length of the pedicle giving them their peculiarity. In this respect they have their analogues in the testes, the ovaries, the small intestines and other pedunculated organs. If the circulation in the pedicle be obstructed, the pedunculated organs suffer in consequence. *Whatever enters into the*

lungs, or is returned from them, must pass through the roots. It must therefore be of the first importance to keep their circulation through the roots open and free. Cupping over the roots is the best known means to effect this purpose according to the laws of counter-irritation over affected parts. The argument that there is no vascular or other connection between the roots of the lungs and the skin must be laid aside by the experience in the matter. Besides this, the actual abstraction of the blood, and the holding of a certain amount of it in one place *pro tempore*, is a means of derivation relieving local tensions, and when employed for this purpose, and with this aim in view, the cupping should be done, if this is possible, at the moment when the tension is greatest. It is thus a means of controlling, or at least of moderating the effects of high arterial action during fever. *Again, cupping is most valuable from the relief of pain, and feeling of oppression, which it affords.* There is no one remedy more valuable, in the treatment of pneumonia, than frequent small cuppings, applied with judgment, at the proper times, according to given principles. By arranging the clothing as described, it can be done without inconvenience, and without removing the patient from the horizontal position.

If we exclude the initial opening dose, the medicines recommended are only five in number.

The first, the muriate and the carbonate of ammonia, have been selected because they answer more of the indications required than any medicines which have ever been proposed. Of the muriate, it is said that by its own peculiar properties it acts upon the circulation in the capillaries and assists to unload them when they are engorged. When given in hot water it is a resolvent, a general expectorant, and a diaphoretic. It seems, upon practice, to act in the way described, and, if persisted in, to meet more of the indications, and to do more good, than any other medicine which has been tried. When flavored with spearmint water it is acceptable to children, and when given in hot water does not produce nausea in older persons. The carbonate of ammonia is more stimulant than the muriate, and it is also a resolvent, and is a remedy which seems to prevent embolism or the coagulating or engorging of the blood in the capillaries. Again, used in another way, for inhaling, carbonate of ammonium is so volatile that it will carry with it other remedies and not destroy their effects. Placed in a large, wide-mouthed, well stoppered bottle, it may be charged with carbolic acid, chloroform, thymol, or any of the antiseptics without injuring their effects, and in this way, inhalants, besides the medication of the air in the apartment, may be used in pneumonia with good effect. This inhaling bottle should be large, and used efficiently by means of deep inhalations.

Antipyrin and antifebrin are comparatively new

remedies, yet, so far as their effects have been observed, they seem to control fever by diminishing the heat of the blood. Their effects have been thus compared and placed in juxtaposition:

| | |
|--|--|
| Antipyrin lowers temperature in half an hour. Effect lasts two hours. More diaphoretic. Depressing after-effects. Cerebral sedative. Dose 15 to 30 grains. Tolerance from continued use. | Antifebrin lowers temperature in an hour, or more. Effect lasts six hours. More diuretic. No after-effects. Cerebral vaso-motor muscular stimulant. Dose 5 to 15 grains. Tolerance from continued use. |
|--|--|

These are valuable remedies in pneumonia. But antifebrin is the best.

Of digitalis, veratrum viride, strychnia, strophanthus, and many other remedies proposed, much can be, and has been, discussed, concerning their action connected with fever and its deservence, and heart failure; and they may be valuable remedies in the hands of those accustomed to their use—but their therapeutics are not sufficiently settled to warrant their exhibition in any system of treatment or cure.

It is interesting and instructive to study pneumonia in its mechanical aspect, if it is only to grasp the problems of the phrase "heart failure," which is so much used by those who have written of its treatment. Heart failure is the most frequent, as well as the most immediate, cause of death. Its mechanism is complicated. Reduced to a few principles it may be said: *First*, In pneumonia there is diminished lung area, and consequently a diminished supply of arterial blood. *Secondly*, the pressure of the exudation and engorgement in the swollen substance of the lung is the obstacle. *Thirdly*, the amount of blood which arrives in the heart has to be forced through these obstructions. This brings a heavy weight upon the right ventricle. *If this is continued* the heart must fail. What course should treatment pursue? Will it force the heart by digitalis; weaken it by veratrum; strengthen it by strophanthus; drive it harder by alcohol? Or, would it be better to endeavor to ease the heart, and to divert its force by cupping? The force is in the current, as the stream of blood arrives, and the strain is on the right side, on the ventricle, to drive the blood through the obstructions.

Repeated and repeated cuppings, in quick succession, it may be, are the safest and the best diverting means which a study of this fearful condition can suggest. To open a vein just at the supreme moment might be better, but there are few physicians who would not consider the cuppings a more safe teaching—and possibly, unless very sure of the moment, a better practice.

The four cases introduced to explain the plan of treatment recommended were hypothetical, and it remains finally to make a summary of them. When the two first cases were reported recovered it was not surprising. Their cases were diagnosed early and treatment commenced immediately; it

was thought fair and proper that they should recover. The third case, however, might be considered a test of good management from the beginning. This case, according to statistics, had less than an equal chance. If a mistake had been made by an indefinite treatment, it would have jeopardized the life of the patient at once. But the fourth case, 70 years old, with malaria and alcoholism, would not recover according to statistics. During a course of an indefinite *individual treatment* something might have been done which would prove injurious to the patient; but by the plan here proposed, *founded upon the mechanism* of the disease, it can be safely assumed that nothing injurious would be done; but, with the frequent cuppings to prevent heart failure, the supporting diet and personal hygiene; besides the continued medication of the air, and the inhaling of antiseptics; with the two resolvent ammonias and the antifebrin; with the antiseptic resolvents applied hot externally, together with a good moral support, we may leave this desperate case as doubtful, yet not without hope.

No mention has been made in the course of treatment of the pneumonia "*foudroyant*," which kills the patient almost like a thunderbolt, because these cases are scarcely recognized before the overwhelming catastrophe occurs. What should be promptly done in these cases is general venesection if one is sure of his case, but at any rate extensive cupping, to prevent the overwhelming congestion. At the same time medicate the air of the room, and use stimulating inhalants, with a view of reviving the patient, to divert the blood by again and again frequent cupping, so as to preserve the heart; and if these, happily, may stay the progress of the disease long enough, then, to commence the plan of treatment recommended.

CONCLUSIONS.

1. The mechanical interference to the circulation and aeration of the blood in the lungs is the main symptom to be combated in the treatment of pneumonia.
2. It requires prompt, urgent and aggressive treatment in the earlier stages of the disease, and this mechanical relief can only be afforded by decided local depletion.
3. Even after the effusion into the parenchyma has occurred, it requires still further local depletion to preserve the heart, and keep open the circulation in the roots of the lungs.
4. Pneumonia admits of study by mechanical as well as vital principles, and its pathology may be elucidated and its treatment improved by study in these directions.

THE CALIFORNIA BOARD OF EXAMINERS, after March, 1891 will require all who seek to practice medicine in that State to be graduates of a three-year graded medical college.

INTRAPERITONEAL RUPTURE OF BLADDER.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY H. H. GRANT, M.D.,
OF LOUISVILLE, KY.

Abdominal surgery, though more than fifty years a thrifty identity, has in the last half a decade assumed such a position, through the boldness and success of skilled operators, as to surpass beyond competition all other departments. Even the newly invaded region of the brain, with its brilliant record, is unmentionable in comparison.

Though among the rarer lesions for which abdominal section is appropriate, the still rarer comparative success after the operation lends an interest to the few recorded recoveries after laparotomy for intraperitoneal rupture of the bladder, beyond numerical desert.

In making report of a successful suture of intraperitoneal rent, I venture to call attention to the history of the operation, now about ten years old. Though the classical opinions expressed by Sir William MacCormac,¹ together with the comments and amplifications by Mr. T. Holmes,² cover pretty well both the theoretical features and the practical details of the condition and operation, yet besides the reports of several operations since Mr. Holmes' paper, there remain for elaboration and systematization many salient and important points.

It is a remarkable fact that, though indefinite reference to the propriety of attempting suture of the bladder after laparotomy for rupture has been made by Gross,³ Larrey, Cussach and others, yet, except the suggestions of Holmes in his "*Principles and Practice of Surgery*" in 1875, nothing like a definite position is mentioned in any textbook on surgery published prior to 1880. Up to these dates the treatment of such condition is dismissed with a few words as to a hopeless expectancy. In a full review of the subject as late as 1886, Mr. Rivington⁴ declares that up to that time intraperitoneal rupture of the bladder, however treated, had been uniformly fatal, excepting only Walter's⁵ case of laparotomy without suture, at Pittsburg, in 1862.

This is perhaps the only laparotomy for the lesion under consideration until Mr. A. Willett,⁶ in 1876, closed by suture of the bladder rent and abdominal wound. It appears that to Mr. Willett is due credit not only for priority in operation, but also in detail of suture of the vesical rent—as he disclaims⁷ knowledge of previous suggestion pointing out the procedure. Interrupted silk su-

¹ London Lancet, December 11, 1875.

² London Lancet, July 23, 1877.

³ MacCormac, London Lancet, December 11, 1874.

⁴ Heath's Surgical Dictionary, 1886.

⁵ Med. and Surg. Reporter, Philadelphia, February, 1862.

⁶ St. Bartholomew Hosp. Rep., 1876, xii.

⁷ Holmes, Lancet, July 23, 1877, p. 171.

tures were used in the bladder twenty-nine hours after injury. Urine escaped, however, through the rent, and death from peritonitis and shock took place in twenty-three hours. In 1878 Mr. Christopher Heath,* forty hours after accident, closed an intraperitoneal rent with continuous catgut suture. Leakage and extravasation occurred, and death on the sixth day.

In 1883 Pilcher,⁹ commenting on these cases, describes with references to Vincent and Stein, the

operation afterward successfully done by MacCormac¹⁰ in two cases in 1886, and now recognized, with slight modification, as the perfect technique. In a table prepared by Sir Wm. MacCormac,¹¹ published in May, 1887, explicit and concise details are given of the history, symptoms, treatment and result in all the cases of intraperitoneal rupture, sixteen in number, reported up to that date. I take the liberty of presenting a new table made up in part of MacCormac's, with fuller de-

| No. | Operator and Reference | Age. | Time after Accident. | Symptoms. | Lesion in the Peritoneum. | Treatment. | Result. | REMARKS. |
|-----|---|--------|----------------------|--|--|--|-------------------|---|
| 1 | Wm. T. Bull, <i>Annals of Surg.</i> , Vol. 1, No. 1. | 46 | 13 hours. | Characteristic..... | 3¼ inch rent in posterior wall. | 6 Lembert sutures; catheter tied in bladder; no drainage. | Died in 7 hours. | Fracture of pelvis; careful antiseptics. |
| 2 | Jos. M. Fox, <i>Phil. Med. News</i> , Dec. 10, 1887. | 38 | 19 hours. | Characteristic..... | 2½ inch triangular rent. | 15 Lembert catgut sutures, catheter tied in; no drainage. | Died in 42 hours. | Post-mortem showed sutures intact; careful antiseptics. |
| 3 | C. Heath, <i>Med. Chir. Trans.</i> , No. lxii. | Adult. | 40 hours. | Tense belly, bloody urine by catheter. | Intraperitoneal rent (not described). | Neither catheter or drainage are mentioned; continuous suture of catgut; not further described. | Died on 6th day. | Post mortem showed sutures had given way (probably on 3d day); treatment probably not fully antiseptic. |
| 4 | Sir W. MacCormac, <i>London Lancet</i> , Dec. 11, 1886. | 33 | 19 hours. | No shock; 95 oz. of blood by catheter; great pain. | 4 inch rent in bladder, far back, not easy of access. | 16 Lembert silk sutures, with a few sutures superficial of catgut; catheter every 4 hours; drainage-tube in abdomen. | Recovered. | There was no peritonitis, and patient recovered without a drawback. |
| 5 | Sir W. MacCormac, <i>op. cit.</i> | 37 | 27 hours. | Neither shock nor symptoms; fluid in abdomen. | 3 inch rent..... | 12 Lembert silk sutures. | Recovered. | Neither catheter nor drainage. No peritonitis. |
| 6 | A. F. McGill, <i>Lancet</i> , 1886, xxi, 972. | 54 | 68 hours. | Insensible for a time. Peritonitis. | 4 inch rent from apex to fundus. | 9 chromic catgut sutures. | Died in 17 hours. | Catheter nor drainage mentioned; post-mort showed bladder wound firm; no fluid in peritoneum. |
| 7 | C. I. Symonds, unpublished. | 47 | 7 | Collapse, great pain, adhesions over hypogastrium, blood by catheter. | Y-shaped rent, partly intra- and partly extra-peritoneal. | 12 Lembert sutures..... | Died on 7th day. | Drain nor catheter mentioned. post-mortem, bladder leaked; pelvic fracture; secondary laparotomy for peritonitis. |
| 8 | T. P. Teale, <i>Lancet</i> , June 24, 1887. | 25 | 18 or 20 hours. | Pain, no urine by catheter, dulness in flanks. | 1 inch rent in fundus. | Perineal section and drainage; laparotomy; 6 catgut sero-serous sutures. | Died in 19 hours. | Post mortem, bladder water tight, no peritonitis. |
| 9 | Mr. Halstrom, <i>Lancet</i> , June 28, '88. | 21 | 13 hours. | No shock..... | Rent 1½ inches.... | Catheter 1st day; 9 Lembert sutures. | Recovered. | No peritonitis, no drainage. Irrigation practiced with boric acid solution. |
| 10 | A. Willett, <i>St. Bartholomew Hosp. Report</i> , 1876, p. 209. | 48 | 29 hours. | Shock, pain, bloody urine by catheter. Peritonitis. | Transverse rent 3½ inches. | Interrupted sutures. (Silk?) | Died in 23 hours. | Leakage of bladder wound. No mention of drain or catheter. |
| 11 | T. Holmes, <i>Lancet</i> , July 23, 1887. | 24 | 6 hours. | Pain; blood-stained urine on deep catheterization; point of catheter felt in abdominal cavity. | Rent 2 inches..... | 8 sero-serous sutures of carbolized silk; perineal section uncompleted. | Recovered. | No abdominal drain; carbolic antiseptics; no peritonitis. |
| 12 | E. L. Keyes, <i>N. Y. Med. Record</i> , Dec. 24, 1887. | 22 | 22½ hrs. | Incipient peritonitis; a little bloody urine by catheter; characteristic symptoms. | Rent 1½ inches backward. | Antiseptic care; 9 Lembert sutures of silk; permanent catheter; glass drainage-tube. | Died in 18 hours. | Post-mort., bladder wound intact; death from shock and alcoholic depression. |
| 13 | H. O. Hitchcock, <i>Pittsburg Med. Review</i> , March, 1888. | 34 | 15 or 16 hours. | Shock; free fluid in cavity of abdomen; could not urinate; 11 pints by catheter of bloody urine from abdominal cavity; no peritonitis. | Rent 2 inches; peritoneal apposition of edges not entirely accomplished. | Carbolized catgut suture, not defined as to introduction; antiseptic irrigation, but not complete; permanent catheter. | Died on 2d day. | No drainage; vague report of post-mortem. |
| 14 | H. H. Grant, unpublished. | 19 | 5 hours. | Shock; bloody urine by catheter; empty bladder later; slight bulging in perineum but no urine on aspiration. | Rent 2½ inches. Fracture of horizontal ramus near symphysis. | 11 carbolized silk sutures, Lembert, complete antiseptics, catheterization every two hours; drainage-tube of rubber. | Recovered. | Drainage-tube removed on 6th day; no peritonitis, no result from fracture. |

* *Medico-Chirurg. Trans.*, vol. lxii.
⁹ *Treatment of Wounds*, p. 370.

¹⁰ *Op. cit.*

¹¹ *Brit. Med. Jour.*, May 14, 1887.

tails supplied to some of his cases, published since his report of them, and adding four cases treated subsequent to his paper. I have removed from comparison cases Nos. 2, 5, 9, 10, 11 and 15 of his table. In Nos. 2, 11 and 15 (the latter Walter's case at Pittsburg) no sutures were used in the bladder, and in Nos. 5, 9 and 10 the injury was extraperitoneal before abdominal section. To the remaining ten cases, seven of which were fatal, I add 4—one by Mr. Holmes,¹² recovering; one by Dr. E. L. Keyes,¹³ died in eighteen hours; one by H. O. Hitchcock,¹⁴ died on second day; and one by the writer, recovering.

The history of this case is briefly as follows:

Case.—Jesse Minor, white, æt. 19 years, weight 135 lbs., fell from the shaft of a light cart (weight 400 lbs.), the wheel passing over pelvis and hypogastrium—from right pelvic spine—leaving only a slight bruised mark on the skin. Accident at noon April 2, 1888. After lying still about fifteen minutes the boy stood up without assistance, tried to pass water, but failed, though his bladder had not been emptied since 6 A.M. Prof. S. E. Woody saw him in about twenty minutes after the accident, elicited the above history, passed a catheter and drew off about 2 ozs. of bloody urine. A hypodermic needle withdrew no urine from the perineum. There was *intense* burning pain in hypogastrium and severe shock. Dr. Woody recognized the existence of intraperitoneal rupture. I saw the patient with Dr. W. at 1:30. A catheter introduced at this hour—about sixty minutes after previous catheterization—withdrew only a few drops of urine, still bloody. The pain, though somewhat controlled by the large doses of morphia given by Dr. Woody, was still severe on motion; pulse good, but countenance indicated shock. Fluctuation was not made out in abdomen, though some dulness existed on percussion over the flanks. The ensemble of the symptoms indicating explorative section of the abdomen, the boy was removed to his home, a mile away, the family advised of his condition, and preparation made at once for laparotomy.

Operation.—At 5 P.M., after examination under chloroform, with the concurrence and assistance of Dr. A. M. Cartledge, the operation was made, five hours after injury. Dr. S. E. Woody administered chloroform, and Mr. Woody, of the class of the Kentucky School of Medicine, assisted us. The pubes were shaved and washed quickly with warm soap and water, and then with a sublimate solution, 1:1,000; 3 per cent. carbolic solution for instruments and thorough cleansing of our hands and arms to elbows; towels wrung out in sublimate solution 1:1,000 were put about the site of operation, and a gallon of hot Thiersch solution prepared to irrigate the cavity. An incision in the median line from the pubes 3 inches

in length exposed the peritoneum, bruised and discolored, but unruptured save in one or two minute spots, through which the bloody water from the cavity oozed out. The cavity was quickly opened and $\frac{1}{2}$ gallon of bloody urine poured out. The incision was now extended to the umbilicus. The introduction of the finger in front of the bladder discovered a loose fragment of bone about the size of a large chestnut, evidently crushed off the horizontal ramus of the pubes. This was not disturbed. Dr. Cartledge now passed a sound into the bladder, and I could presently find its point emerging through a rent in the fundus, $2\frac{1}{2}$ inches in a transverse direction. The cavity of the bladder could be easily explored by the finger through this rent.

The abdominal cavity was washed out with Thiersch solution and, while the bladder was held up by a stout catgut ligature passed through the peritoneal coat behind the rent, I easily introduced eleven sutures of carbolized silk—rather coarser than would have been preferred—after Lembert's method, beginning a little beyond the end of the rent and drawing together the peritoneal investment of the bladder beyond both extremes of the tear. This part of the operation, done with an ordinary curve-pointed needle without a holder, was accomplished with unexpected facility. The bladder was not tested by injection for want of a proper syringe. The cavity of the peritoneum was again carefully irrigated with hot Thiersch solution, and sponged dry with mops of absorbent cotton. The wound was closed with deep sutures of silk passed through the skin, muscles and peritoneum. Superficial sutures of catgut closed the wound around a drainage-tube of soft rubber, introduced by Dr. Cartledge behind the bladder. Iodoform was dusted over the line of sutures, and bichloride gauze covered with absorbent cotton and bandage completed the dressing. The time occupied in the operation was about one hour.

The patient reacted promptly from the chloroform, and spoke intelligently in a few minutes. A hypodermic injection of $\frac{1}{3}$ -gr. morphia was administered, and he was left in the care of Mr. Woody, with instruction to introduce the catheter every two hours. He spent a fair night, with almost no pain. About 14 ozs. of urine were drawn in eighteen hours. At 8 A.M. his pulse was 115, temperature 99°. He was carefully watched and fed, and the catheter used every two to four hours as time went on, Mr. Woody and Mr. R. C. Telly, my private student, also of the class of the Kentucky School of Medicine, remaining with him alternately night and day. His temperature went to 100° but once—on the ninth day, from constipation—returned to normal after a free evacuation in response to sulphate of magnesia.

The drainage-tube was aspirated with a syringe daily for five days, never yielding over 1 drachm of sweet serum. It was removed on the sixth day.

¹²Op. cit.

¹³N. Y. Med. Record, December 21, 1888.

¹⁴Pittsburg Medical Review, March, 1888.

The wound united throughout, except around the tube, by first intention. The patient sat up on the fourteenth day; catheterization was discontinued on tenth day. The fracture of the pelvic ramus gave no trouble, and has occasioned no symptoms. I present the patient to speak for his recovery as complete.

In comparing the various methods of detail in the operation I shall return presently to one or two features in the steps taken in this case. The briefest report of the recorded operations I can make is in a reproduction of the table I have prepared. Fourteen cases are recorded in which the complete steps of laparotomy, intraperitoneal suture of the bladder, and closure of the abdominal wound were practiced. In some the catheter was tied in the bladder, in others repeated catheterization was practiced, and in one or two no steps were taken to drain the bladder. Abdominal drainage was practiced in the majority of cases. Of the total five recovered and nine died.

As a duty of the very highest practical importance bears upon us the obligation of determining, out of a comparison of results, which treatment promises most. Three methods are before us. The plan of inaction, with merely drainage by the catheter, recommended as safest by Heath,¹⁵ after failing in his operation, must, in the light of present knowledge, be condemned as unsurgical and not to be entertained. We will consider laparotomy without suture; laparotomy with suture to external wound; laparotomy with closure of bladder rent.

It will be noticed from the table that no case of recovery presented any peritonitis, which of itself speaks volumes for the safety of the operation under antisepsis.

Notwithstanding the success of Walter's case, treated by the first method, there was severe peritonitis, besides the other reported cases, one by J. Duncan¹⁶ and one by Sonnenberg¹⁷ died on the 3rd and 4th days respectively of intense peritonitis. Moreover, most frequently the rent is so large, or occupies such a site in the bladder, as to render the prevention of seepage of urine into the peritoneal cavity impossible by any form of drainage. Besides, it is difficult to see any advantage to accrue from leaving the wound unsutured after the belly is sewed up as in Walter's case. The presence of carbolized silk sutures introduced by the method of Lembert, if not absolutely harmless, are a thousand times safer than extravasation of urine, and, if they occasionally, or even in two-thirds of all cases, fail to accomplish the object of their introduction the condition is no worse than those before. Nay, it is much better, for every hour before the extravasation nature is throwing a breast-work around the parts she desires to protect, and if the stitches do yield on the 3d or 4th

day the damage will be certainly less disastrous.

With reference to the second method referred to favorably by later writers, notably Wyeth,¹⁸ as appropriate for intraperitoneal rupture as well as after extraperitoneal supra-pubic section, a diversity of opinion is likely to prevail. The conditions after supra-pubic lithotomy are more favorable to convenient and successful suture of the bladder than in cases of rupture; yet the results are certainly less favorable in cases so treated. In his "Observations on Supra-pubic Lithotomy" last year, Sir Wm. MacCormac says: "Schmitz has collected fifty-seven cases of suture of the bladder; forty-seven recovered, and eight died.

The bladder wound healed by first intention in seventeen cases. The permanent catheter was used twenty-three times; eight times the wound united by first intention. In thirteen cases the catheter was not used; of these only three united by first intention. Twenty-three time catgut was employed, with only four successful results. In ten of the seventeen, where union took place by first intention, the mucous membrane was not included in sutures; in five no statement is made whether or not; in two, it was included; when the sutures gave way, this happened generally on the 4th day. By this time the danger of infiltration is mainly over."

These facts indicate that about one-third of cases of suture hold permanently, in the remaining cases the wound re-opens. Though, in intraperitoneal rupture the conditions are not quite so favorable, and though it is particularly true that the lapse of two or three days is not so much a safeguard against infiltration as under the conditions referred to by Schmitz, yet his conclusions are highly pertinent to the subject. In the same paper MacCormac gives statistics of the suprapubic operation without suture, with mortality of 24.4 per cent.; with suture the mortality is 35 per cent.

In view of these figures, which represent facts, it is perhaps wise to select a medium course. Under such conditions, as considerable period since the injury, with unfavorable local and constitutional indications with irregular lines in the rent, it would be preferable to stitch the tear to the abdominal wound, fill the incision with iodoform gauze, and drain both by catheter and tube. Under most ordinary conditions, and especially when the rent is too far back to admit of reaching the abdominal incision, the third method is appropriate. In a private communication, Prof. J. A. Wyeth mentions a case under his observation in which the bladder rent was closed, and then, for safety, the bladder attached to the abdominal wound. The cut, occurring during ovariectomy, did re-open, but infiltration was prevented by the patient re-covering.

¹⁵ Op. Cit.

¹⁶ Lancet, 1886, vol. ii.

¹⁷ Centralblatt für Chirurg, 1885.

¹⁸ Text Book on Surgery, 1888. Page 366.

¹⁹ British Medical Journal, March 12, 1887.

Diagnosis. All experienced observers on abdominal surgery are in accord as to the great advantages of an early operation. The time *par excellence* is in the first eight or ten hours. Shock after such an injury does not subside, but deepens with the growing gravity of the condition. Though case No. 7, of MacCormac's table, operated on twenty-seven hours after accident recovered without peritonitis, yet in Walter's case peritonitis appeared in ten hours, and in most recorded cases indications of inflammation were found at the operation.

Symptoms. Though the symptoms are usually characteristic; clear history, great pain, severe shock, desire to urinate with futile attempts, perhaps little bloody water by catheter, and at times catheter can be felt high up in abdomen—yet occasionally the condition is greatly obscured. In Keyes' case, though the patient was seen in forty minutes after the accident, the nature of the condition was not suspected for fifteen hours. In neither of MacCormac's patients was there shock, and one presented so little distress that he was referred to a dispensary as an out-patient for the first day. Most writers on the subject, refer to the rarity of intraperitoneal rupture. Comparatively, this is true, but I am inclined to believe the infrequency of reports of such condition is due to its being often overlooked. In the *N. Y. Medical Record*, 1888, Dr. M. Singer, of Galveston, reports a case of a man 27 years old, admitted to hospital ten or twelve hours after injury from a kick in the abdomen, catheterization frequently repeated in fifty-four hours preceding death after admission, always found plenty of urine.

Autopsy showed an intraperitoneal rent three inches in length. Attention being drawn to the treatment by recent success, I predict much more frequent reports. Prior to 1886, 3 exploratory laparotomy for rupture, are reported. During 1886, 4 exploratory laparotomy for rupture, are reported. During 1887, 5 exploratory laparotomy for rupture, are reported. Thus far, 1888, 3 exploratory laparotomy for rupture, are reported.

In view of the pretty well established belief that laparotomy of itself, done under careful antiseptic precautions, adds but little to the gravity of any grave condition, it is right to urge that when symptoms strongly suggest rupture of the bladder, and particularly when aspiration of the perineum discloses no infiltration an exploratory operation should be done without delay.

But little is to be added to the conclusions of MacCormac and Holmes as to treatment. Clearly the bladder-wound should be closed after complete cleanly antiseptic irrigation of the abdominal cavity. This irrigation can be most safely done with the Thiersch solution (boracic acid 12 parts, salicylic acid, 2 parts, water 1000 parts), freely and carefully used to remove all contaminating taints. The wound should be approximated with silk

sutures—after Lembert's method. The silk should be carefully carbolized, and of a fairly firm texture, introduced not farther than one-fourth inch apart, cut short and abandoned. Nothing will be lost by washing out the bladder after suture with the Thiersch solution. Both the best of the suture and antiseptic irrigation of the bladder are accomplished in this way. Four ounces is enough to employ. If any leakage appears from such amount of distension, it should be at once looked after. It is true such a step takes a little time, but it is not ill-spent, if it discovers a faulty suture through which a fatal seepage may take place.

The question of abdominal drainage is not decided. It is open to objection on the ground of admission of septic germs, and the weakening of the abdominal walls. The first can be avoided by covering the tube with antiseptic dressings, and carefully, practicing aspiration, and the second by withdrawing the tube in four to six days. By aspiration of the drain all accumulation can be evenly removed, with the risks of absorption of such septic material as may accumulate in the cavity.

Perineal section for the purpose of drainage is condemned, both by MacCormac and Holmes, as not only difficult, upon the empty bladder, but a useless and dangerous complication. When suspicion of urinary infiltration in the prevesical space complicates the diagnosis, aspiration through the perineum, with a long needle, will indicate the condition.

With regard to catheterization, I cannot put the slight risks of the occasional introduction of a soft aseptic catheter, in comparison with the immense advantages of rest of the bladder and prevention of over-accumulation of urine and straining after suture. Though perhaps after the fourth day the patient may be permitted to relieve his bladder in the natural way, even then he should carefully urinate every two or three hours, avoiding all forced contraction of abdominal muscles or of bladder walls.

Refreshing the edges of the rent is wholly unnecessary when the approximation is made by the sero-serous method of suture.

Of antisepsis it is useless to make other mention than that the protection it offers should be secured to every patient by the most skillful and unremitting care.

DR. H. O. MARCY, of Boston: Within the last two years I have had two cases of injury to the bladder which should be put upon record. They were not ruptures from external causes. One was a case in which I found, to my surprise and sorrow, that, while operating upon a large uterine myoma, I had made an incision of from 1 to 2 inches into the bladder. I sutured it together, and union took place. In repairing the rent, I united first the edges of the mucous mem-

brane, and then the overlying structures, with fine tendon sutures. The second case was that of a child of 2 years of age in which there were two openings. I succeeded in closing them, followed by complete cure. All this helps to contribute interest to the subject, and I am sure we are under obligation to Dr. Grant for his demonstration of the subject, for bringing his patient so long a distance to exhibit the result.

GASTROSTOMY; WITH THE REPORT OF A CASE.

BY MILES F. PORTER, M.A., M.D.,
OF FT. WAYNE, IND.

Carl Z., æt. 19 years, German, family history unimportant. Four months before his admission to the Ft. Wayne City Hospital, while yet in Germany, during a drunken spree, he swallowed some "browish-looking fluid" which "burned his throat at the time," since which he has had gradually increasing difficulty in swallowing. He entered the hospital Sept. 9, 1887, when an examination by his physicians, Carl Proegler and Howard McCullough, revealed the existence of an organic stricture of the œsophagus, commencing at the level of the cricoid cartilage, and extending downward about $1\frac{1}{2}$ inches, rendering the passage tortuous and admitting of the passage of no instrument except an elastic urethral bougie; the largest size of this which passed being No. 16, Am.

Repeated efforts to pass olive and acorn ivory-tipped whalebone bougies failed, even with tips of smaller diameter than the elastic bougie passed. Deglutition of liquids and semi-fluids only was possible, but exceedingly slow and difficult. Regurgitation often occurred, and attempts to swallow were accompanied by severe fits of coughing. Notwithstanding the repeated passage of bougies, the stricture grew tighter, deglutition even of fluids became almost impossible, the patient lost strength and weight, and was crying with hunger, when on Dec. 4, 1887, he was advised by his physicians to have the operation of gastrostomy performed. Having gained his consent they requested me to operate, which I did in a room prepared by fumigation with sulphur for 18 hours, thoroughly aired, and supplied with new bed and bedding. I was assisted by Drs. H. McCullough and Carl Proegler, and there were present Drs. Dills and McOscar, a nurse, and the matron of the Hospital.

The patient, having received a bath and clean clothing, was etherized, when his abdomen was washed in a 1:1000 solution of corrosive sublimate, and an incision three inches long was made parallel with and an inch below the costal cartilages of the left side, dividing the muscles—including the outer edge of the rectus—and fascia down to the peritoneum. Forceps were applied to bleeding

points, the peritoneum hooked up and divided on a director the full length of the wound. The greater end of the stomach—which organ was much contracted—together with the lower border of the liver now presented, when the anterior wall of the stomach was drawn out and two threads of black silk were passed parallel and about three-eighths of an inch apart through the peritoneal and muscular coats, by which the organ was held in position by Dr. McCullough while the operation was being completed. Two stitches were passed at each end of the wound, including the parietal peritoneum and all structures of the abdominal wall. Two more were now passed, one above and one below, working toward the centre, including the same structures and also the outer coats of the stomach, after which six sutures were passed on each side of the wound, including the outer coats of the stomach, the parietal peritoneum and skin. All the sutures were now tightened, in the same order as placed, cut short, the wound washed, dried, dusted with iodoform and covered with six layers of sublimated gauze and a generous supply of absorbent cotton secured by a bandage pinned snugly around the body. No ligatures were required. All stitches, 18 in number, together with the guide-threads, were of iron-dyed silk. The guide-threads were of course allowed to remain until the stomach was opened.

The operation occupied less than an hour, and was followed by only slight shock, from which he reacted nicely, the pulse being 76, respiration 26, and temperature 100.5° F. the next morning—18 hours—after the operation.

All went well until the end of 40 hours, when the cough, which had troubled him somewhat ever since his trouble in swallowing commenced, grew worse, respiration became more frequent, the pulse 110, and temperature 102.2° F. An examination revealed a broncho-pneumonia of the lower right side, and showed the wound dry, with no evidence of peritonitis. Up to this time the patient had been taking milk, champagne and brandy *per os*, for, as is usually the case, he had less difficulty in swallowing after the operation; but as efforts at deglutition always excited the cough, enemas were now substituted, and hypodermatics of morphia, grs. $\frac{1}{4}$, given to quiet the cough, which caused pain in the wound. Fomentations were applied to the chest.

The patient gradually grew worse until, at 3 P.M. of the 7th, 48 hours after the operation, the temperature was 103° F., pulse 142 and feeble, respiration 50 with marked cyanosis, and death was looked for by both of my colleagues and myself. We now administered 8 drops of Squibb's fl. ext. of digitalis, hypodermatically, with brandy; ordered fomentations and enemas continued, and 10 drops of digitalis every three hours *per os*, while the morphia was discontinued on account of the cyanosis, though it had produced no pronounced

symptoms of narcosis. Much to our surprise the patient improved so that on the 8th, at 4 A.M., the pulse was 126 and much stronger, temperature 101° F., respiration 38, and cyanosis much diminished. At 3 P.M. of the same day, though the temperature had risen to 103° F., yet the pulse had improved, falling to 122 with increased strength, respiration 49 and cyanosis still diminishing. A hypodermatic of morphia ($\frac{1}{4}$ gr.) was now given for cough, the dressing removed, and stomach opened, by puncturing with a tenotome, and a No. 10 French elastic catheter introduced and fastened with adhesive strips. The digitalis and enemata were now discontinued, stimulants and nutriment being given by injection through



The enemata were well retained throughout, the bowels moving first on the sixth day.

The patient gained in strength and flesh and continued to feed himself both through the fistula and in the natural way, being able at times, especially in the early morning, to swallow better than at others, though the stricture grew tighter and tighter until May 7, 1888, since which time he has fed himself entirely by the tube. On April 30 the tube was removed, and a tupelo tent inserted to dilate the fistula, after which a large, hard-rubber tracheotomy tube was inserted; but as this permitted a great deal of leakage, a soft catheter, No. 16 (American), was substituted, since which no leakage has occurred. The first tube was entirely satisfactory in every respect, except that its diameter was too small to allow of a sufficiently varied diet.

During the first seven days after the use of the larger tube he gained seven pounds in weight.

The character of the stools have indicated throughout a good digestion.

The photograph here shown was taken just before the substitution of the larger for the smaller tube, and consequently represents him as poorer in flesh than he is at the present time. Without tiring our reader by an extended review of this subject I wish, briefly, to discuss the following questions:

1. When should the operation be made?
2. At what time should the opening in the stomach be made relative to the opening of the abdomen?
3. What anæsthetic should be used?
4. What kind of tube is best?

Regarding the first question I am convinced, from a rather extended research into the literature of the subject, that J. Greig Smith is right when he says "statistics prove little in the way of results beyond the fact that the operation is systematically delayed too long." While this is true whether applied to cancerous or cicatricial stricture, yet *early operation* should be particularly insisted upon in the latter class of cases, for in these the operation is not merely palliative, but may prolong life indefinitely.

The mortality after operation is about the same in malignant and non-malignant cases. This, it seems to me, can only be accounted for by assuming that the operation is deferred too long in the latter in the hope that something may yet be done by milder methods. In strictures located high, as a result of the entrance of foreign matter into the bronchial tubes during efforts at deglutition, a bronchitis is often set up which will continue to grow worse as the cause continues; hence I regard the presence of bronchitis as an indication for early operation.

I cannot close the discussion of this question

fistula, and, as the cough grew less, he was allowed to take some milk, etc., *per vias naturales*.

The dulness began to disappear and the recovery from this time on was uninterrupted, though the respiration continued rapid until the wound was healed, which was due (in part at least) to the wound having been made too near the costal margin.

The stitches not connected with the stomach were removed on the fifth day, and those attaching that viscus to the abdomen on the tenth.

He sat up first on the ninth and was walking at by the twenty-fifth day.

better than by recommending for adoption the doctrine of J. Greig Smith.

Speaking of cicatricial strictures he says: "I conceive, therefore, that in every case, . . . as soon as it becomes evident that minor measures are ceasing to be efficient, we ought to perform gastrostomy. And, further, the operation ought not to be delayed beyond the time when the health begins palpably to suffer."

2. What time should the stomach be opened relative to the opening of the abdomen?

If the patient be able to swallow fairly well without producing cough, or if enemata be well retained, and there is no immediate danger of death from exhaustion, it is better to wait four or five days before opening the stomach. If, however, there be much bronchitis which is clearly aggravated by attempts at swallowing, or if death from exhaustion is threatened and enemata are not well retained and absorbed, then the operation should be completed at once or at most at the expiration of four or five hours, as agglutination will take place in this time. I am not aware that any one has ever spoken of bronchitis as an indication for early operation, or its completion in one sitting, but to my mind it is one of the most frequent and important in cases in which the stricture is located high or in which there is much regurgitation. In view of the fact that the necessity for the early opening of the stomach may arise in any case, it would be better always to fix the stomach accurately and securely to the abdominal wall.

3. What anæsthetic should be used? While I am opposed to chloroform as a general anæsthetic, yet we believe it by far the safest in the great majority of cases of gastrostomy. Bronchitis frequently exists at the time of operation, and if we add to this the additional irritation that ether always produces, it will not take a great stretch of the imagination to see how it might prove fatal. And a pneumonia or bronchitis would prove fatal in these cases that under ordinary circumstances would be promptly recovered from. Not only does the exhaustion, usually present, and the shock from operation contribute to the fatality of bronchitis and pneumonia in these cases, but another important factor also, is the proximity of the wound to the diaphragm and its involvement of accessory muscles of respiration, which renders deep breathing painful and leads to a continuous congestion of the lungs, even in the absence of inflammatory action. Again, coughs are more or less dangerous in all cases of abdominal incision, for the traction which they produce on the stitches interferes with union and may open the wound. If ever I am called upon to make this operation again I shall use chloroform as the anæsthetic in the absence of any special contraindication.

4. What kind of tube is best? Leakage after establishment of the fistula is one of the greatest

drawbacks to the operation. Various devices have been used with varying degrees of success. J. Collins Warren describes and illustrates a very ingenious device in the *Medical Record*, of Nov. 5, 1887, which was successful in the case there reported, and is constructed on the same principle as Bernard's tube, which he used in dogs, except that Warren's was made of india-rubber. With both these tubes the idea is to prevent leakage by approximating the flanges. Such approximation leads, as a rule, to annoying, if not serious, ulceration from pressure.

Any tube made of hard material is objectionable; for if it fits tight enough at first to prevent leakage, it will soon produce absorption by pressure, and then leakage will occur. Again, if a hard tube is used there is danger of the inner extremity producing irritation unless great care be used not to have it long enough to project beyond the level of the mucous surface. The tube should be such as can be worn continuously, and would permit of feeding with a minimum amount of trouble. The lumen of the tube should be sufficiently large to allow solid food to pass easily through it. An ordinary soft rubber catheter of large size (No. 26 to 30 F.), held in place by adhesive strips, meets all requirements better than any other device with which I am acquainted. The flexibility of the catheter and its smooth rounded end prevent it from producing annoying irritation. Being soft, it can be fitted tight enough to prevent leakage without the pressure producing absorption, the gastric juice does not affect it, it is sufficiently long to permit of food being given through it without removal of any of the clothing. Outflow of the stomach contents is easily prevented by the use of a cork in the extremity. One should be chosen with as thin walls as can be found, for they will be found to differ in this regard very considerably.

June 4, 1888.

A LARGE SUPPURATING ABDOMINAL CYST.

*Read before the Medical Society of the District of Columbia,
March 7, 1888.*

BY JOS. TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

I was called to Miss C. on February 13, 1888, by Dr. Bedford Brown, of Alexandria, Va. I found her to be a spinster, aged 57 years, with an enormous cystic abdominal tumor, which had been diagnosed as ovarian. After examination, I expressed the opinion that it might be ovarian, but was quite as likely to be a dermoid-cyst or a fibro-cyst of the uterus. It was so very large as to prevent any accurate palpation or diagnosis of its attachments or origin. She said she had first noticed it low down in the left side—that she had always thought it had something to do with the kidney on that side. It had not prevented her from at-

* Abdominal Surgery, second edition, p. 251.

tending to her duties as a school teacher for a long time. Thought it had been growing for 20 years. For the past five months had grown rapidly, and for several weeks she had been confined to bed—had lost all desire for food, suffered much from nausea, diarrhoea, progressive emaciation and consequent prostration. Had had several attacks of peritonitis, with pulse varying from 100 to 120, and temperature from 100° to 103°.

When I saw her she was a great sufferer from the effects of the size and pressure of the tumor; embarrassed respiration, two large bed-sores forming, inability to hold her water, absolutely no appetite, frequent vomiting, turned over in bed with great difficulty, and was unable to sit up or walk about.

From the size of the growth I judged it must weigh about 75 pounds. She was very anxious for an operation, and requested to know if she had any chance to get well. I told her I thought she had, but that she had many points against her; such, for example, as her age, 57, her great weakness, inability to take food, repeated attacks of peritonitis, probably resulting in the formation of numerous adhesions, lack of recuperative power, etc. She was anxious to enter my private hospital and made her plans to be transported to Washington, but I was unwilling to receive her.

I went to Alexandria on the morning of February 28, 1888, taking with me Dr. Cuthbert, to assist, Dr. Luce, to administer the anæsthetic, and a trained ovariectomy nurse. Preparations being completed the operation was begun at 10:15 o'clock.

I was less sure of my diagnosis after palpation under ether and as the operation proceeded grew more and more uncertain, and after the tumor was removed was more uncertain than ever. Percussion showed tympanitic resonance low down in front and over the anterior surface of the tumor in a narrow line. I knew I should find intestine there and I did. Upon making a three-inch incision the descending colon came first into view, and the entire anterior surface of the tumor was covered with omentum, in which were many large blood-vessels. I selected a spot free from vessels after enlarging the opening to six inches, and tapped the tumor with Lusk's large trocar. I drew off 70 pints of brownish black fluid. Her breathing at once became deeper and better.

I then drew out a portion of the sac and cut through the vascular omentum, and began the tedious process of enucleation. The intestine being attached to omentum it peeled off with the omentum and gave little trouble by itself.

The great cavity out of which the cyst came was entirely outside of the general abdominal cavity. While enucleating the cyst I tore through its capsule or covering low down in the pelvis and thus gained an opportunity to examine for the first time the nature of the pedicle, and was sur-

prised to find the uterus and ovaries perfectly normal and entirely free from any connection with the tumor. I continued the enucleation and finally freed it from all its attachments. In doing so I was compelled to enlarge the incision three or four inches above the navel, and traced its origin deep down and to the left of the vertebral column. I now thought it to be an enormous cyst of the left kidney. The condition of the patient became so bad that fears were expressed that she would die on the table. Every effort was made to revive her, including hot water in the abdominal cavity. It was evident she was sinking and the pedicle was drawn up into the upper angle of the wound, and finally secured with Keith's clamp. The cyst cavity and abdominal cavity were then washed out, the edges of cyst cavity were stitched to the edges of the abdominal wound which was closed with a dozen sutures; dressings applied, and the patient put to bed. She died in about half an hour.

I have been unable to decide as to exact nature of the tumor. Dr. Lamb, of the Army Medical Museum, says he does not know what it is, and I hope it will be referred to the microscopical committee for examination and report.

The following is Dr. Lamb's report:

Large Suppurating Cyst, Removed by Dr. J. Taber Johnson.—The cyst is unilocular with several depressions like sub-cysts, whose walls have disappeared in the general cavity; or they may be simply sacculi. The outer surface shows a smooth covering like peritoneum; the inner surface a nodular thickening like a suppurating surface, chronic in character, and in recent state was partly covered by blood-clot. The wall itself is white and dense and shows many sinuses like the wall of the pregnant uterus; but they appeared to be entirely empty of blood. Two tubes enter the great cavity in very much the same oblique manner as the ureters in the bladder; indeed they much resemble the ureters. They do not so much resemble Fallopian tubes.

MEDICAL PROGRESS.

TREATMENT OF HEAT FEVER.—DR. F. A. PACKARD, of Philadelphia reports thirty-one cases of heat fever treated at the Pennsylvania Hospital during the summer of 1887. The cases were all treated under a canvas roof, covering over a portion of the hospital yard. This was found to be a great convenience, and of benefit to both patients and attendants. As the yard is paved with artificial stone, and could consequently be kept cool by liberal use of the hose, there was a much less impeded circulation of air under the canvas than could have been obtained

in a ward, and the cases were removed from the unavoidable bustle and constant motion present in the general receiving ward. Adding to this fact that practically no time at all elapsed between their arrival in ambulance or police patrol wagon and the institution of treatment, the advantages of the temporary ward are apparent.

Almost without exception the cases were brought to the hospital either on the hospital ambulance or on the police patrol wagons, and were usually rubbed with ice on the way up to the hospital. The patrol crews soon learned how to diagnose and temporarily to treat sun-stroke, and on only one occasion was a patient rubbed with ice who was not a fit subject for such treatment. This preliminary icing undoubtedly was of value to the patients as saving time, and it probably kept the temperature record in the cases at a lower average than it would otherwise have obtained.

As soon as a patient with heat fever was brought to the hospital he was placed on a waterproof fracture-bed, his clothing removed as rapidly as possible, a thermometer introduced into the rectum, and ice packed about the body and extremities. Usually at the outset, \mathfrak{m} , xv or xx of *tr. digitalis* were administered hypodermatically. The thermometer was removed every seven minutes, the icing being continued until the rectal temperature fell to 104° F. The patient was then dried and put on a clean bed, with an ice-cap to his head, and in favorable cases the temperature gradually fell to normal. It was found that, if the icing were continued after the rectal temperature had fallen below 104° F., there was apt to be too rapid and great a fall, so that the application of external heat and free stimulation were required—a state of affairs certainly undesirable.

The above is an outline of the general mode of treatment adopted in the cases with temperature exceeding $106\frac{1}{2}^{\circ}$ F. Those cases with a temperature below that point were stripped and liberally sponged with a mixture of one part of alcohol and four parts of iced water, an ice-cap being applied to the head. If the temperature were not above 106° F., this was always found to be sufficiently active treatment. Subsequent elevations of temperature occurring after primary reduction were treated after the manner indicated above. In but a few cases were any other antipyretic measures adopted.

Other means of treatment were employed to meet individual symptoms in various cases. Where convulsions were present after the temperature had been lowered to a considerable extent, morphia was employed, usually with good effect. In the favorable cases respiration and pulse both improved in character with the fall of temperature, but if they did not do so, bleeding was employed in spite of the feeble pulse, and was almost in-

variably followed by quieter, fuller respirations, with a soft, steady pulse.

A word in regard to the use of bleeding. When the face was congested or livid, the capillary circulation over the whole body obstructed, the heart, as determined by auscultation, laboring to force the blood around the vascular circle, the breathing shallow and stertorous, the contracted pupils with other evidences of obstructed venous circulation in the brain present, the evident indication was to empty the overloaded veins of the blood that was stagnating in them and so embarrassing both respiration and circulation. Wet-cupping behind the ears was always first tried, but it was in almost every case impossible to withdraw more than a few thick black drops of intensely altered blood, even when crucial incisions, with a bistoury were added to the smaller incisions of the scarificator. In no case where it was attempted could enough blood be withdrawn by this means to affect either the general or cerebral circulation. Bleeding from the median basilic was then, if deemed necessary, employed, and even with this free outlet the blood did not flow, but had to be squeezed up from the hand, issuing then in thick, black jets and ceasing as soon as upward pressure with the hand was discontinued. After the withdrawal by this means of from twelve to sixteen ounces of blood there was usually marked improvement in circulation, respiration, and color, with, in some cases, complete or partial return of consciousness.—*American Journal of the Medical Sciences*, June, 1888.

SACCHARIN IN PREVENTING AMMONIACAL CHANGE IN URINE IN CHRONIC CYSTITIS.—DR. JAMES LITTLE says:

For the past three years I have been asked, from time to time, to see a lady, nearly 80 years of age, who is quite confined to bed in consequence of chronic disease of the bladder, which gives rise to frequent and painful calls to pass water. The urine always threw down a copious purulent sediment, and, except when decomposition was prevented by treatment, was always ammoniacal. The lady has many times passed with great suffering, phosphatic calculi, and, I have no doubt, many such exist in the bladder, but she has always refused to permit any surgical interference beyond the occasional introduction of a soft catheter, and the washing out of the bladder by a lady who acts as her nurse. Quinine and boric acid, when taken in fair doses, always purified the urine; but about three months ago her stomach became so irritable that these drugs could not be borne, and the washing out of the bladder by a weak warm sublimate solution could no longer be practiced, as the passage of the catheter had become exquisitely painful. The consequence was that the urine became so offensive that the odor met one on the stairs, and the

patient's attendants had often to leave the room to avoid being sick. In this difficulty it occurred to me to try saccharin. I directed six of the tabloids to be used daily. In three or four days the urine was no longer offensive. The patient has continued their use ever since, and the urine has not again become ammoniacal, though there is little if any, diminution in the quantity of contained pus.

Since the foregoing case came under my observation, I have had four other opportunities of observing the effect of saccharin in patients who were passing ammoniacal urine. They were all males; one a case of catarrh of the bladder, in a paraplegic gentleman; one a case of chronic cystitis, with enlarged prostate; and two cases, in which there had existed stricture of the urethra, but in which, although a surgeon had successfully dilated the stricture, the urine remained ammoniacal. In all these cases the saccharin was distinctly useful, but in all its administration had been combined with the daily use, by the patient himself, of a catheter, so as to prevent the accumulation of residual urine in the bladder—a precaution without which no drug will, I think, prevent decomposition of the urine.—*Dublin Journal Med. Sc.*, June, 1888.

CAFFEIN AS A CARDIAC STIMULANT.—DR. DE GEMPT writes (*Berl. klin. Woch.*, Nos. 25 and 26), in support of the employment of caffein (mostly in the form of the bisalt, "caffeinum natrosalicylinum") hypodermically and by the mouth in cases of threatening collapse, especially in pneumonia. He records several such cases, but, in all, other stimulants, as alcohol, ether and ammonia, were more or less freely given. The dose of the caffein was 0.35 grm., repeated four or five times a day, but sometimes a larger quantity—*c. g.*, 0.2 grm.—was given. The author says that the drug is indicated in the course of acute pneumonia, as soon as there is evidence of cardiac failure, lowered arterial pressure, great rapidity or irregularity of the pulse. The administration of the drug should be commenced, if possible, before the onset of collapse; but even if the latter condition set in rapidly the drug is often of use, and is most urgently indicated. Where there is cardiac debility, and also in the very young or old, caffein may be prescribed from the beginning of the attack. The result of its employment is to cause a diminution in the pulse and respiration rates, an increase of the arterial pressure, with fall of temperature and general improvement. Stimulants are not to be withheld, but are often very usefully given in conjunction with the caffein. The drug has a very rapid action, and in serious cases the effect may be still more quickly produced by administering it subcutaneously. It may be continued for a short time after the pyrexia has abated. Caffein is also

indicated in collapse and hypostatic congestion of the lungs; whilst in pulmonary emphysema and asthmatic conditions the indications for its use are the same as those in cases of heart disease.—*The Lancet*, June 30, 1888.

INHALATIONS OF SULPHUROUS ANHYDRIDE IN PHTHISIS.—DELON records the case of a man, 32 years of age, whose father died of pulmonary disease at 65. His wife also died of phthisis. Two months previously he caught cold and coughed incessantly. Subsequently he rapidly became emaciated and had profuse night-sweats. Rise of temperature at night. Appetite and digestion good. On examination, the right apex was found to be consolidated, with moist râles after coughing. He was treated by counter-irritants and subcutaneous injections of eucalyptol. His general health was also attended to. He did not improve, and by the end of February he expectorated large quantities of green, purulent material. His condition was grave in the extreme, a cavity having formed in the right apex, and sulphurous inhalations were resorted to as a last resort. Half a handful of flowers of sulphur was thrown on to a shovel of red hot cinders, and the patient inhaled the fumes until prevented by impending asphyxia. Each séance was followed by abundant expectoration of the purulent material. In the course of a fortnight signs of amelioration manifested themselves. The inhalations were continued together with the general treatment. Three weeks later the patient was apparently cured. The cavity in the right apex had cicatrized, and his general condition was flourishing. He was enabled to resume his laborious employment as a navvy, and no recurrence had taken place down to December, 1887.—*London Med. Recorder*, May, 1888.

THE SUBCUTANEOUS INJECTION OF ANTIPYRIN.—WOLFF, of Breslau (*Therap. Monatshefte*, June, 1888), thus summarizes the uses of antipyrin subcutaneously: 1. In the muscular rheumatism. 2. For the chest pains of phthisis. 3. For the neuralgias of superficial nerves. 4. As an aid in diagnosis. 5. In attacks of asthma. 6. For painful conditions, when morphine is contra-indicated, or to replace the latter, particular in children and those who bear morphine badly.—*Medical News*, July 14, 1888.

DISINFECTANT INJECTION IN LEUCORRHOEA.—CHÉRON uses the following formula:

| | |
|-------------------------------|----------|
| Chlorate of potash | 12 grams |
| Sydenham's laudanum | 10 " |
| Tar water | 300 " |

Dissolve. Use 2 or 3 tablespoonfuls to the litre of warm water, and inject night and morning. The injection should last from 5 to 6 minutes.—*Gazette de Gynécologie*, June 1, 1888.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5 00
 SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
 No. 65 RANDOLPH STREET,
 CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 28, 1888.

WHEN SHOULD DIGITALIS BE PRESCRIBED?

Bearing in mind the physiological and therapeutic actions of digitalis, it is a matter of less difficulty to give the principal indications for it in the organic affections of the heart. As was pointed out last week, one of the indications for the use of the drug is the period of the cardiopathy. But before considering the question, when digitalis is useful, it is well to know when it is injurious or useless. There may be, says Huchard, a cardiac *lesion*, but still no cardiac *malady*; the state of cardiac contractility, which should regulate the employment of digitalis, is normal. In the period of eusystolism, characterized by normal and almost perfect ventricular systoles, digitalis is useless. Here hygiene should be the only treatment. Suppose we have an aortic or mitral lesion, with hypertrophy, and the attendant physical signs, with frequent epistaxis, repeated accesses of acute pulmonary hyperæmia, congested face, injected eyes, ringing in the ears, heavy head, headache and cephalic throbbings, vertigo, the arteries beating with violence, the radial pulse full, vibrating, resistant, and there are frequent, often painful, sometimes nocturnal palpitations, causing more or less rebellious insomnia. Digitalis is injurious in these cases, says Huchard, for the patient has entered into the period of hypersystolism, characterized by increased arterial tension, and the drug will increase his distress. Here, too, hygiene and diet are the remedies, or

the bromides, aconite, and even arsenic, with perhaps leeches, or venesection.

For the same reason digitalis should not be given in the first phases of what Huchard terms arterial cardiopathies. For a long time he has insisted on the capital distinction between valvular cardiopathies and the vascular or arterial cardiopathies. The latter are nothing more nor less than the localization of arterio-sclerosis on the heart, characterized by increased arterial tension, which is the cause and not the effect of the sclerosis. In the early periods of arterio-sclerosis of the heart digitalis should be employed only with the greatest reserve, since, by increasing vascular pressure, it may lead to cerebral hæmorrhages, and by it also the nocturnal palpitations are increased, dyspnoea becomes more intense, and anginous accesses may be provoked.

After the period of hypersystolism, aortic patients, less frequently mitral, pass into the period of hyposystolism or asystolism. Here digitalis is useful. It produces the best effects. But there may come a time when the effects are no longer obtained, when the systole is soft and without energy, or the cardiac cavities are distended, when there is circulatory obstruction with peripheral œdema and visceral congestions, and diuresis remains below normal. Here digitalis is injurious, and for two reasons: 1. The cardiac muscle is profoundly altered, and digitalis can no more act on it than can electricity on a cut nerve. The drug here becomes an agent of prognosis and diagnosis, for it shows the existence of profound degeneration of the myocardium and of a true parietic state of its fibres (amyocardia). 2. In cardiac patients, in the subsequent alteration of the organs, there are two distinct periods: the one of venous stasis, the other of irremediable sclerotic lesions, in which cardiac drugs are given in vain. Still, in this last period caffeine in large doses may give very remarkable results.

Nevertheless, there are varieties in this cardiac paralysis, and there are degrees in this powerlessness of digitalis. The amyocardia (cardioplegia of Gubler) may be temporary, as may be the powerlessness of the drug. It should be remembered always that *if we wish to strengthen the heart we must facilitate and lighten its work*. Before prescribing digitalis we must empty the too full venous system, and this is best accomplished by venesection, local abstraction of blood, or by re-

peated purgations. Want of success with digitalis does not always depend, then, upon the disease, nor upon the patient, nor on the remedy, but upon the physician, who has not placed his patient in the most favorable conditions for the action of the drug.

At an advanced period of heart disease we often find albumin in greater or less quantity in the urine. This is not an absolute contra-indication to the employment of digitalis. The dangers of the administration of active medicines in renal affections have been much exaggerated, though that there are dangers no one can deny. But they demand prudence, not the doing away with drugs. That digitalis can be safely used in these cases is probably due to the fact that it is not eliminated by the kidneys, as was shown some two years ago by Lafon. While albuminuria is not a positive contra-indication to the use of digitalis, therefore, the drug should be used with caution in these cases, in moderate doses for two or three days, and its action carefully watched.

The seat of valvular lesions is an indication as to the use of digitalis. In aortic stenosis, for example, we know that the cardiac contractions and the pulse are slow. Why then should we prescribe a drug that will slow them still more, and that will act very much as the malady does? By doing this we expose the patients to the dangers of digitalism. In aortic insufficiency the diastolic rest of the heart is already long enough; digitalis makes it longer, and increases the already high arterial tension caused by the disease. Why add to the already injurious effects of the heart disease? asks Huchard. In mitral insufficiency it should be prescribed only in cases of great cardiac irregularity, or of confirmed hypsystolism. In pure mitral stenosis it often causes bad effects. It should not be forgotten that mitral and aortic stenosis are the two cardiopathies that remain latent for a long time, and demand active treatment late. There is no doubt that in aortic affections, and especially in Corrigan's disease, digitalis is often contra-indicated for a long time: it raises arterial tension in an affection in which this is already exaggerated; by augmenting the suddenness of the systole it gives to the blood-waves violent and repeated oscillations, which added to the high tension may cause cerebral hæmorrhages; it prolongs the already augmented diastolic period; finally, it contributes, by its vaso-constrictor action,

towards increasing the visceral and peripheric anæmia caused by the disease. In aortic affections more than in any other it is wrong to localize the lesion at the aortic valve, and then to take no account of the localization in the treatment.

But, says Huchard, the knowledge of the orifice affected is of secondary importance only for the indication of the drug. The therapeutic indication must be found in the cardiac muscle, as has been admirably expressed by Stokes, and endorsed by Laënnec. The situation of the cardiac souffle, its intensity and its absence furnish no indications for the administration of digitalis; it is the state of the heart muscle and of the vessels, their feebleness (cardio-vascular asthenia), and asystolism, that demand the use of digitalis. Let us understand what is meant by asystolism, as Huchard uses the term. There exists in all cardiac diseases a period intermediate between hypersystolism and asystolism, which Huchard calls hypsystolism. Now let us suppose a case: we have a patient in whom some months ago there were all the signs of normal or even exaggerated compensation; the præcordial shock was strong, vibrating, and well limited, the apex slightly lowered, urine normal in quantity, no trace of visceral congestion, and no œdema of the lower limbs. He now comes with slight perimalleolar œdema in the evening, becomes breathless easily, and has palpitations and a sensation of fulness of the chest. Examination shows slight congestion of the liver, which is painful on pressure, pulmonary hyperæmia and œdema; the cardiac contraction is soft, unequal and irregular, the cardiac impulse more extended, more diffuse, less sensible, the apex displaced, and cardiac dulness increased transversely; the first sound of the heart is more or less dull or weakened, the second a little loud in the region of the pulmonary orifice and to the right of the sternum. The pulse is feeble and undulating, the jugular veins swollen and prominent, and the urine scanty. In this case there should be no hesitation in regard to prescribing digitalis, for, says Huchard, there are three capital indications: feebleness of cardiac contractility, lowering of arterial and increase of venous tension, and scanty urine coexisting with peripheral œdema or visceral congestions. The urine furnishes indications for the administration of digitalis: if it becomes uratic, and falls below 800, 500, or to 200 grams a day, digitalis should be given. In giving digitalis in cardiac affections

we should examine the urine as carefully as we do the thermometer in fever.

In either asystolism or hyposystolism there may be three causes of error in regard to the contra-indication of digitalis: 1. The cardiac beats may be tumultuous and violent, the impulse of the heart becoming energetic for a few moments; but examination a few minutes afterwards may show that the energetic systoles are followed by weak or aborted and precipitate ones, constituting the cardiataxic asystolism of Gubler. Digitalis should be prescribed as a tonic and regulator of the circulation. 2. We may have a patient in whom the dilatation of the heart-cavities strikes against the thin and emaciated thoracic walls, giving the false sensation of energetic and violent beats. Here the clinical error is doubled if a therapeutic error be made by withholding digitalis on account of supposed exaggerated compensation. 3. In asystolism the dilated right heart is in immediate relation with the thoracic wall; if it lie close to the diaphragm the beats may be communicated to the whole epigastric region. The extent of these beats is no indication of their force; they will be found feeble, undulating, and scarcely appreciable, and digitalis should be prescribed.

To recapitulate with regard to valvular lesions: Digitalis is useless in the period of eusystolism, when the lesion is compensated; it is injurious in the hypersystolic period, when the compensation is exaggerated; it is efficacious in the hyposystolic or period of transient asystolism, when the cardiac muscle and the vessels are suffering from asthenia, and when there are œdemas, visceral congestions, dropsies, and the heart beats softly and feebly; in the period of definite asystolism, or of amyocardia, when the cardiac muscle is profoundly degenerated, digitalis is sometimes useful, it may be useless, or it may be injurious. It is in these cases sometimes that caffeine in large doses gives such signally good results.

There are still other classes of cases in which digitalis is used, but the consideration of these must be deferred.

THE CROONIAN LECTURES ON ANTIPYRETICS.

In his Croonian Lectures this year DR. DONALD MAC ALISTER has complemented his Gulstonian lectures of last year, in which nothing was said

in regard to the treatment of fever. While his subject for this year was "Antipyretics," the lecturer discussed the light thrown on the nature of fever by the means employed successfully for its treatment, and the lessons in the treatment of fever that flow from a right understanding of its nature.

In his first lecture Dr. Mac Alister went over the physiology of thermolysis. It has been found by Masje that probably 60 per cent. of the heat leaving the body does so by radiation. In the Zurich Hospital the true laws of skin radiation have been worked out, and have been found to be strikingly suggestive. A part of the skin suddenly uncovered naturally becomes cooler, but its radiation increases steadily as the temperature falls, until a certain limit is reached. Radiation is more active as the processes of nutrition and metabolism are more active. There are reasons for believing that the radiating power of the skin, which can be shown to depend on its physical and chemical constitution, is subject to nervous control; and in this way what seems to be the most purely physical of all the thermolytic processes is really under the control of the thermal nervous system.

In his second lecture Dr. Mac Alister discussed what may be termed the teleological pathology of pyrexia. It is admitted that fever is a sign of disorder, of disturbance, of a physiological function or functions. The author has some words for those that look upon high temperature in the infective diseases as a salutary process, and suggests that fever may be more salutary to the bacteria than to the patient. Nor is the view correct that high temperature is purely mischievous, and the efficient cause of all the dangers that threaten a fever-patient, since it must be admitted that many of the morbid phenomena accompanying fever occur independently of it. "High temperature," says Dr. Mac Alister, may or may not connote pyrexia. Some of the ways in which temperature may be raised are harmless, and there is good reason to believe that non-pyrexial elevation of temperature is not in itself a danger. Volkmann and other surgeons have recorded cases of aseptic operations and injuries in which temperatures as high as 105° were accompanied by no loss of appetite, no distress, and no symptom that could be characterized as febrile.

In the third lecture Dr. Mac Alister turned from the consideration of high temperature as the danger in the infective diseases to the infection, and then to the question of treatment. In regard to the infection he thought it obvious that if the grave morbid phenomena could not be set down to the pyrexial temperature we must attribute them in a large measure to the action of the specific virus or poison. Since the chief pathogenic factor in the specific fevers is apparently the specific virus, our first search must be for a specific remedy capable of destroying or counteracting the virus. Such are quinine and salicylic acid in malarial and rheumatic fevers, and their claim to be antipyretics rests on their specific action to a large extent. But the ideal febrifuge, which will allay fever by restoring to healthy function the disordered thermotaxic mechanisms, thrown out of gear by the action of the morbid poison, has yet to be found. The next best thing to such a drug is to discover a mode of treatment that shall act vicariously for the thermotoxic mechanism, and compensating for its lost control over the thermal functions.

EDITORIAL NOTES.

HÆMORRHAGIC INFARCT OF A UTERINE MYOFIBROMA.—In *L'arch*, No. 9, 1888, MME. PROKOPIEVA reports a case of this rare condition in a woman æt. 34 years, nullipara. The tumor was removed through the abdominal wall, and was as large as a five or six months' fœtus. On the surface was a round spot, deep red at the periphery, but clearer toward the centre. On section this was seen to be prolonged in the form of a cone in the centre of the tumor. Microscopic examination showed that the tumor had the structure of a myofibroma, with hæmorrhagic infarcts (with destruction of the blood-globules and of other cell elements at the centre of the infarct, and marked hyperæmia at the periphery).

The patient said that the tumor was first noticed a year before the operation. At this time she felt a sudden sharp pain in the pelvis, and she was forced to remain in her bed for three weeks. Then the abdomen began to enlarge, and the growth of the tumor was very rapid. At the time of the operation the circumference of the abdomen was 90 cm. The uterine cavity was enlarged. There was slight mitral insufficiency, which was in favor

of the embolic origin of the infarct. Before being operated on the patient remained in the hospital six weeks; the abdominal pains persisted, and increased at the menstrual epochs. Among the prominent clinical symptoms in this case were the pains. Laparotomy showed that the pains were exactly at the seat of the infarct.

A LEECH IN THE LARYNX.—In a recent number of the *Revue de Médecine et de Pharmacie Militaire* is an account of a case in which a leech got into a man's larynx, without his knowledge, and caused symptoms for which DR. GODET and the other medical attendants could not account. The patient suffered from hoarseness and a sensation of a foreign body in the larynx for some three weeks, but he had no serious dyspnœa, and nothing could be seen with the laryngoscope. Finally he began to spit blood, and then he felt something move in his throat. On the 23d day, after the patient had made a violent expiratory effort, Dr. Godet saw the leech fastened in the subglottic part of larynx. Having no proper laryngeal forceps at hand, he divided the thyroid cartilage in the middle line, and the leech was easily removed. The cartilage was closed with two sutures, and perfect union resulted. The patient's voice was not affected by the operation.

AN UNUSUAL CAUSE OF DEATH.—The *Memphis Medical Monthly*, of July, has the following, from the *Memphis Appeal* on a coroner's jury's report: "The investigation developed the fact that the dead woman's skull was cracked, exposing the brain. The mother, husband, and little child of the dead woman were all examined by the jury, but their evidence failed to show the cause of the strange opening in the skull. There being no further evidence in sight the jury retired for deliberation, and returned its verdict, which was that the woman died suddenly from a natural cause, produced by expansion of the skull." The county officials, says the *Memphis Medical Monthly*, allow but \$5 for post-mortem examinations, whatever the character of such may be, and for this reason the coroner is not able to obtain the service of a competent physician.

PHYSICAL EDUCATION OF THE BLIND.—A sound system of education has been developed by DR. CAMPBELL at the Royal Normal College for the Blind. A blind teacher gives instruction in

singing, and connected with the College is a gymnasium, swimming bath, cycling track, and a boating lake. The College, says the *British Medical Journal*, is now educating 160 students, but it effects more than that for the public good in training a large number of teachers, who go thence to all parts of the world. A Royal Commission is now inquiring as to the educational needs of the blind, and the best means of providing them.

A MEDICAL FACULTY FOR SERVIA will, it is said, be soon established. Belgrade has a University that contains all the faculties except that of medicine. Servian students have been hitherto obliged to go abroad for their medical education. Most of them have gone to Vienna or to Paris, since the Austrian and French degrees are recognized by the Servian Government. They that have gone to Germany and other foreign countries, however, had to pass an examination before a medical commission in order to obtain the right to practice.

NEW TEST FOR BISMUTH.—To the Society of Chemical Industry MR. F. B. STONE recently showed a very delicate test for bismuth. It depends on the fact that a strong solution of iodide of potassium produces a bright yellow color when added to a very dilute solution of sulphate of bismuth, containing only a small quantity of free sulphuric acid. One part of bismuth in 1,000,000 will show a distinct coloration.

A MARINE BIOLOGICAL LABORATORY has been completed at Plymouth, England, overlooking the Sound. The Marine Biological Association of the United Kingdom was founded "to promote accurate researches leading to the improvement of zoological and botanical science, and to an increase of knowledge as regards food, life-conditions, and habits of British food fishes and mollusks."

SIX CHILDREN AT A BIRTH.—DR. VASSALI, of Lugano, reports the case of a woman that gave birth to six children at one time, about the 115th day of pregnancy. There was only one placenta. The mother had previously given birth to seven children in two labors.

A PROFESSIONAL WEDDING.—The marriage of Professor Joseph Jules Déjerine, of Paris, and Mlle. Augusta Klumpke, Interne of the hospitals of Paris, is announced.

THE MARGARINE ACT IN ENGLAND seems to have had a salutatory effect upon the adulteration of butter, for Mr. J. Carter Bell, the Cheshire County Analyst says that of fifty-one samples one only was adulterated.

DR. ENGLMANN, Professor of Comparative Physiology and Histology in the University of Utrecht, has been appointed successor to Professor Donders in the chair of Physiology. Dr. Engelmann's chair is taken by Dr. Pekelharing.

DR. PAUL LOYE, tutor in Forensic Medicine in Paris, is to go to Germany and Austria to study the organization of that branch of study in those countries.

THE NUMBER OF MEDICAL STUDENTS AT GREIFSWALD is on the increase, and the clinical students for this summer's session number more than 200.

THE JEFFERSON MEDICAL COLLEGE announces that with the winter session of 1890 a three years' systematic obligatory curriculum will begin.

THE LEHIGH VALLEY MEDICAL ASSOCIATION will hold its eighth annual meeting at Paxinosa Inn, near Easton, on August 15.

DR. RAYMOND, of the Paris Faculty will go to Russia to study the teaching of nervous diseases in the Russian Universities.

THE HOSPITAL SUNDAY COLLECTIONS in London this year amounted to £37,475; last year the amount was £37,000.

THE TRI-STATE MEDICAL ASSOCIATION of Mississippi, Arkansas, and Tennessee will meet in Memphis on November 13.

DR. DIANOUX has been appointed to the recently established chair of Clinical Ophthalmology at Nantes.

PROFESSOR PREYER, Director of the Physiological Institute in Jena, has been called to Berlin.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet in St. Louis on September 11.

DR. FR. LÖFFLER has been appointed ordinary Professor of Hygiene at Greifswald.

THE NUMBER OF MEDICAL STUDENTS IN LEIPZIG is now 783.

PROFESSOR SCANZONI has resigned his position at Würzburg.

SOCIETY PROCEEDINGS.

American Otological Society.

Twenty-first Annual Meeting, held at Pequot House, New London, Connecticut, July 17, 1888.

MORNING SESSION.

The Society was called to order by the PRESIDENT, DR. J. S. PROUT, of Brooklyn.

Drs. Green, Theobald and Carmalt were appointed as the Business Committee.

Dr. E. Williams, of Cincinnati, was elected an honorary member of the Society.

Dr. W. H. Carmalt presented the report of the committee of conference on

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The report was accepted and it was decided that when the Society adjourns, it adjourns to meet at the Arlington Hotel, Washington, D. C., September 18, 1888, at 11. A.M. On motion of Dr. Green it was decided that the meeting should be strictly for scientific matters and should not be regarded as a business meeting; that it should not take the place of the annual meeting.

Two papers by Dr. S. Sexton, of New York, entitled *Periostitis Externa of the Mastoid* and *Some of the Indications for Excision of the Drum-head and Malleus*, were read by title.

DR. CHARLES H. BURNETT, of Philadelphia, reported

A CASE OF AURAL VERTIGO (MENIÈRE'S DISEASE) RELIEVED BY EXCISION OF THE MEMBRANI TYMPANI AND MALLEUS.

The patient was a young, unmarried woman, 37 years of age, who six years previous had been under treatment for chronic naso-pharyngeal catarrh and chronic catarrh of the left middle ear, accompanied with hardness of hearing, tinnitus aurium and a sense of fulness in the affected organ. Treatment of the catarrhal disease of the ear produced no benefit. After the lapse of six years, the symptoms already named grew worse, and there was superadded marked aural vertigo. The membrani tympani in the line of the malleus handle were found adherent to the promontory, and the consequent retraction of the entire chain of bones was held to be the cause of the aural vertigo and the sense of fulness, and of the tinnitus. The operation of excision of the membrana tympani and the malleus was performed under ether, May 21st last, with entire and immediate relief to the aural vertigo (which before had often been sufficient to cause the patient to hold to a lamp-post for support), and to the sense of pressure and tinnitus, which good result has been maintained

to the present time. The hearing was practically unaffected by the operation. The incus was detached from the stapes but could not be removed, as it slipped into the attic, and grappling for it is not advisable on account of the risk of irritation. Its removal, furthermore, would have no effect in the result of the operation.

DR. J. O. TANSLEY, of New York: I have now under my observation a girl on whom this operation was performed some eighteen months ago. When she came to me the whole internal canal was filled with polypi and she presented serious brain symptoms. I took out all the polypi and found a portion of the drum remaining, and above a localized necrosis into which a probe passed at least $\frac{1}{4}$ -inch. The patient has been under observation every day for two months. The local necrosis is healed and she is doing well. There are still some brain symptoms. It seems to me that this is a very serious operation, and I should hesitate some time before performing it on account of the results that might occur. In this case the result seems directly traceable to the operation.

DR. C. H. BURNETT: My patient did not remain in Philadelphia, but I was informed that two or three weeks after I saw her a discharge appeared. I think that there is still a slight discharge, but the membrane is forming. In another case a slight discharge appeared soon after the operation, but ceased after the membrane had reformed. The case reported by the last speaker was not one of the class to which I have alluded. The operation was evidently not properly performed if there remained a portion of the membrane and there was neurosis. I have not found this a dangerous operation. No one has reported bad results from this operation properly performed.

DR. S. SEXTON, of New York: I have performed this operation between fifty and one hundred times in the past few years, and have obtained decided benefit in a number of cases of tinnitus and other subjective symptoms. I have known of no case in which there was aggravation.

DR. S. SEXTON then exhibited *A New Portable Battery for the Storage of Electro-motor Force*, and *A New Head Lantern for the Employment of Electric Light in Surgery*.

The battery was made at his suggestion by the River and Rail Electric Light Co., of New York. It consists of three cells and will light a six-candle electric light. The lantern is a modification of that of Trouve, but much lighter and having a non-conducting base. Such a light is almost necessary in operations on the ear when ether is used as an anæsthetic. The battery will work continuously for twenty-four hours and will retain its power for several weeks or months. It may be charged by a dynamo or by twelve gravity cells. When not in use the storage battery may be kept in connection with the gravity cells.

DR. A. H. BUCK, of New York, read a paper on
REFLEX INFLUENCES IN THE PRODUCTION OF
NASO-PHARYNGEAL CATARRH.

We know little of the direct exciting causes of naso-pharyngeal catarrh. The most common indirect cause is chilling of the surface of the body. According to certain authorities affections of the teeth should rank next in order of frequency. The author had, however, seen very few cases in which dental disturbance played the part of a promoter of naso-pharyngeal catarrh or of aural disturbance. Some of those indirect causes which he had observed were then enumerated. Irritation of the gastro-intestinal canal is in not a few instances a strong exciting cause of naso-pharyngeal catarrh and of all the aural disturbances growing out of such a catarrh. A male 45 years of age had for years been more or less a sufferer from naso-pharyngeal catarrh with tinnitus aurium and slight impairment of hearing, and more recently had begun to suffer from feeble digestion. He noticed that after indulgence in certain articles there would be abdominal discomfort, and at the same time marked exacerbation of the naso-pharyngeal catarrh. So long as the offending substance was in the stomach, there was only a slight sense of discomfort, but in the course of three or four hours a slightly painful peristaltic movement would set up in the bowels. Simultaneously the secretion from the vault of the pharynx would become unpleasantly active and the tinnitus would increase. This condition would last for an hour, and then the naso-pharyngeal catarrh would return to its usual state. These attacks were accompanied with the escape of large quantities of gas by eructation. In many patients, usually men between 40 and 60 years of age, where we have reason to believe that the gastro-intestinal tract is habitually in a state of greater or less irritation, we find the faucial mucous membrane red and swollen. In these cases the disease which claims chief attention is the gastro-intestinal affection.

Reflex influence involving the vault of the pharynx and the ear may emanate from more distant sources. A lady 40 years of age complained of distressing tinnitus involving both ears. There had been mild naso-pharyngeal catarrh from time to time for many years. At times she was almost entirely free from tinnitus. I always succeeded in giving prompt relief by applying a moderately strong solution of silver nitrate with a mass of absorbent cotton to the vault of the pharynx. After a time this failed to give relief. It was then learned that for many years she had suffered with pain in the pelvic regions and back, and that at this particular time she was suffering in a more marked degree. A specialist was then consulted, and it was found that there was retroversion of the uterus and subacute parametritis. These con-

ditions were removed and the tinnitus disappeared without treatment to the vault of the pharynx.

The author stated that he had spoken of these as indirect causes, that is, as factors competent to aggravate a preëxisting but perhaps latent catarrhal disease; but he saw no reason why these reflex influences may not, in certain cases, play the part of direct exciting causes. He considered it impossible to demonstrate the correctness of this belief, and preferred to adopt the view which assigns to them a less independent rôle.

DR. S. D. RISLEY, of Philadelphia: It is pretty generally admitted that nasal and pharyngeal disease are especially liable to occur in persons of a gouty diathesis. Naso-pharyngeal is one of the most uniform manifestations of lithæmia. From the symptoms detailed in regard to the first case of Dr. Buck, I should suggest that the digestive disturbance was probably associated with a lithæmic condition.

DR. C. H. BURNETT: I have seen a number of cases of tinnitus without deafness due entirely to dyspepsia. The use of nitrate of silver has been referred to. While this may be of service in other locations, I think that it is the worst application that can be made to the nose or the naso-pharynx. Its use will be followed sooner or later by sclerosis and atrophy.

DR. S. SEXTON: I have seen many cases in which irritation in the mouth has been the cause of naso-pharyngeal catarrh and aural symptoms. A lady was brought to me with intense pain in the ear and the head. There was nothing in the condition of the ear to account for these symptoms. Examination of the mouth showed that she was wearing a plate to bring the teeth closer together. The gum was intensely inflamed, although the patient complained of no discomfort. The removal of the plate caused a disappearance of the pain in the ear and head.

DR. J. F. NOYES, of Detroit: This paper brings up the fact that it is important that in our special practice we should consider general practice. I have always recognized those so-called reflex causes, and have treated cases by searching out these causes.

DR. SAMUEL THEOBALD, of Baltimore: I think that where atrophy follows hypertrophic catarrh it is the result not of the application of nitrate of silver, but of the continuance of the catarrh.

DR. CHAS. J. KIPP, of Newark: I agree with Dr. Theobald as to the value of nitrate of silver. I rarely use it in a stronger solution than 20 grs. to the ounce, and neutralize it afterwards by salt water.

DR. HENRY D. NOYES, of New York. I have frequently noticed the connection between the lithæmic condition and certain affections not only of the naso-pharynx, but also of the external auditory canal. There are certain eczematous conditions associated with the gouty diathesis.

DR. A. H. BUCK read a paper entitled
A CONTRIBUTION TO THE ANATOMY OF THE ELEPHANT'S EAR.

The ear was exhibited and the interesting points indicated. The external auditory canal is imbedded in air-containing cells, and is $6\frac{1}{2}$ inches long. The canal at the time of examination was filled with desquamated material. In the middle ear, the handle of the hammer seems to lie in a horizontal plane. It is not vertical, as in the human being. The anterior part of the drum cavity is completely cut off from the posterior part. The Eustachian tube comes up through a system of air-cells and opens through one of them close to the drum membrane. Under the floor of the tympanic cavity there are three septa making stall-like spaces. Two of these are quite long, six or seven inches. The labyrinth and other parts were not examined.

DR. HUNTINGTON RICHARDS, of New York, reported a case of

POLYPOID ANGIOMA OF THE EAR.

The patient, a girl 6 years of age, came under observation May 4, 1888, with profuse and badly swelling otorrhœa, unaccompanied by pain, and dating only from the preceding February. Hearing seemed good. No bleeding from the ear had ever been observed. The general health was excellent. Examination of the affected ear revealed a polypoid mass almost occluding the canal. The color was deep purplish red. A considerable portion of the tumor was at once removed with the snare, and the remainder of the growth was extracted on the following day, leaving a small pedicle attached, seemingly, to the outer surface of the drum membrane, close to the prominence formed by the short process of the hammer. This stump was cauterized with chromic acid. Hæmorrhage from the cut surface of the growth was unusually profuse at both operations. The child's hearing is now excellent, although both membranes are depressed and of a dark grayish-red color. The removed growth was pronounced to be an angioma. Three micro-photographs, showing the appearance of the growth, were shown.

DR. RICHARDS also reported a case of

"FALSE-DRUM MEMBRANE."

The patient, a man 21 years of age, was totally deaf in the affected ear. There was a vague history of an attack of otitis media in early childhood. The other ear presented the common appearance of otitis media purulenta chronic. Examination of the ear that was not discharging showed a membrane occluding the canal. It differed from the normal drum membrane in color, shape, relation of its plane to the long axis of the canal, and apparent thickness. It varied little in color from the skin lining the canal. The surface was perfectly smooth.

A triangular opening was made through this membrane. This caused no pain. Through this opening it was seen that there was no drum membrane, but the inner wall of the tympanic cavity came into view. The hearing was only slightly improved. When seen a few days later no discharge had appeared. Since that time he has not returned to the Infirmary.

DR. SAMUEL SEXTON: I have seen several such cases as that described in the last paper. In a case seen last year I removed the membrane and then took out the malleus and incus. This case made a good recovery. The improvement in hearing was decided. I would suggest this operation in such cases as a possible means of improving the hearing for it opens up the tympanic cavity which is a good condenser of sound; and in the second place to prevent the accidental occurrence of inflammation in these parts when it might be difficult to obtain relief.

DR. T. V. SUTPHEN, of Newark: I have seen one or two cases of this trouble, which seems to be due to cicatricial closure of the external canal. It seems to me that the condition would be best spoken of as a cicatricial closure of this canal.

DR. A. MATHEWSON, of Brooklyn: A lady was under my care for some time with an eczematous condition of the external meatus. She then passed from observation. Some time later she presented herself with a disk-like closure of the external canal. This was not complete as there was a small opening in the centre. I dilated this opening with laminaria bougies and the ear was left in perfect condition.

DR. CHAS. H. BURNETT: I have seen several of these cases of dermoid diaphragms in the canal. Three of these were in private practice. One was in an old man and it remained imperforate during the whole time he was under observation. The other cases were perforate when they came to me. There was slight discharge which I checked and the perforation healed. In one case the discharge returned after a short time and the perforation reappeared. Under treatment it healed and I have reason to believe has remained closed since, a period of four or five years. In the other case remained closed for a year, when the opening returned with slight discharge. The discharge ceased under treatment, the opening closed and has remained closed.

EVENING SESSION.

DR. J. B. EMERSON, of New York, read a paper on

THE FLEXIBLE CATHETER AS A DRAINAGE TUBE; WITH CASES.

The author cited several cases exhibiting the use of the flexible catheter as a drainage tube. With deeply-seated inflammation of the auditory

canal or mastoid cells, maintenance of drainage through a fistula is a necessity; and to prevent closure of the fistula either by granular growth or natural healing is important. Dr. Emerson recommends the use of the flexible catheter as generally the best means to employ and states his reasons to be, the comparative comfort and safety, together with convenience of control by both surgeon and patient. The efficiency observed in his use of the flexible catheter was also referred to.

DR. CHAS. J. KIPP, of Newark, reported

THREE CASES OF TRANSIENT BILATERAL HORIZONTAL NYSTAGMUS IN CONNECTION WITH PURULENT INFLAMMATION OF THE MIDDLE-EAR.

Case 1.—A young man, 21 years of age, had had otorrhœa seven or eight years previously. Three months before coming under observation he had an acute exacerbation and suffered intensely with pain in the ear and head. The otorrhœa much diminished. Two or three weeks later he came stating that he saw objects double, was dizzy, and could not walk. There was marked nystagmus in a horizontal direction. The vertigo and nystagmus continued four days. With the cessation of the nystagmus the vertigo disappeared.

Case 2.—A young man treated six years previously for acute otitis media purulenta, ending in recovery, appeared in March with an acute attack. Paracentesis was performed. The pain, however, continued for a long time. Finally swelling developed behind the mastoid and this was accompanied with several epileptiform attacks. One day, pressing on the swelling, pus poured from the canal. With this there was a sudden jerk of the head and nystagmus. The latter continued for about ten minutes. This was produced every time pressure was made on the mastoid. The mastoid was subsequently opened. Since then there has been improvement.

Case 3.—A young man, after exposure, was seized with intense pain in the ear, followed by otorrhœa. When he came under observation there was great pain. This was not relieved by treatment but continued two or three weeks. Then a swelling appeared below the ear. This was incised and a large quantity of pus evacuated, with relief to the pain. Some days later while washing out the cavity, the fluid came through the ear when considerable force was used. At the same time there was a jerk of the head and nystagmus continuing several minutes. This could always be produced by making a forcible injection.

DR. O. D. POMEROY, of New York: Reference has been made to epileptiform symptoms in one of the cases. I have recently seen a case of epilepsy in which the exciting cause was suppuration of the middle-ear. With recovery from the ear disease the convulsions ceased and have not returned.

An Improved Aural Snare was exhibited by Dr. J. O. Tansley, of New York.

A paper by Dr. S. Sexton, New York, on *Foreign Bodies in the External Auditory Canal*, was read by title.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. J. S. Prout, of Brooklyn.

Vice-President—Dr. Gorham Bacon, New York.

Secretary and Treasurer—Dr. J. J. B. Vermynne, of New Bedford, Mass.

Committee on Membership—Dr. A. Matthewson, Dr. D. B. St. John Roosa, and Dr. John Green.

Delegate to the Congress of American Physicians and Surgeons: Dr. W. H. Carmalt, New Haven. Alternate, Dr. G. Bacon, New York.

The Society then adjourned to meet at the Arlington Hotel, Washington, D. C., Tuesday, Sept. 18, 1888.

Medical Society of the District of Columbia.

Stated Meeting February 15, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

Dr. D. S. LAMB presented the specimen and read the history of a case of

TUMORS OF GLANDS,

which he thought were possibly syphilitic. The case was last attended by Dr. C. A. Norton, a licentiate of the Society, who furnished the following history: J. E. D., white, age 36, father of five children, three of whom died in infancy. He had been a farmer; latterly a coal dealer. Unfit for business for last two years. Was confined to house for last three months. Died February 7, 1888. Dr. N. had seen him only for the three days before his death.

There was much emaciation; body in a cold sweat; pulse 98, feeble, intermittent; temperature 101.8°; respiration 19, labored; skin a dirty yellow, smooth and shining. Lips and mucous membrane of mouth pale; tongue dry and brown, edges pale; parotid and submaxillary glands enlarged, especially the left; abdomen swollen, not tender; large, hard, well-defined mass in region of stomach; spleen large; inguinal glands enlarged, in the left groin as large as the fist; feet and legs swollen; sexual organs normal. Had had a feeling of burning in stomach for over a year. Much thirst; after taking fluids, vomited watery, brown, foul smelling liquid. Bowels loose; stools thin, streaked with blood, and pale green pus; often involuntary. Urine pale, cloudy, normal in quantity; involuntary. Patient restless; had pain all over; some dysphagia.

His grandfather died at 50 of cancer of liver;

grandmother at 70 of ulcer of stomach; father and mother alive and well; had thirteen brothers and five sisters, all alive but six who died of infantile diseases. Patient was not a drunkard, but a great smoker; contracted syphilis about fifteen years before death, from a colored servant in the family. Was treated for over a year and said to be cured. Three years afterwards had sharp pain in left hip, extending to back and legs; had to stop work; often had to walk the streets to ease the pain; could not sleep. Had much pain in bones of face and head. Was treated again for four years without benefit. Began to lose flesh; stomach became weak and food distressed him.

Post-mortem examination by Dr. D. S. Lamb. Head and spinal cavity not examined. Lymphatic glands near angle of jaw enlarged. Both pleural sacs contained a large quantity of serum; so much in the left sac that the lung was nearly collapsed; some old adhesions on right side. Lungs themselves normal except several hard white nodules, about one-eighth inch in diameter, under the periphery; apparently obsolete tubercle. Heart appeared normal; not opened. There were a number of firm flat masses on posterior surface of sternum and similar ones on each side of spine between 4th and 5th ribs; doubtless enlarged glands. Liver large, congested. Gall bladder distended with pale green bile. Spleen enlarged, about 20 oz. in weight, and congested. Pancreas normal. Stomach showed some congestion towards pylorus and contained some mucus. Small intestines normal. Large intestine contained scybala. Kidneys large; their cortex pale. Bladder distended with urine. Prostate normal. Lumbar, iliac and inguinal glands much enlarged and firm. Penis showed no scar.

DR. SMITH was one of those physicians who had seen the patient from whom Dr. Lamb had removed the glands. He had consulted him about four months ago, when the glands in the left groin were enlarged; those in the right only slightly. He came two or three times but there was no improvement, and as operative interference was suggested, he was frightened and never returned.

DR. ACKER had examined the specimen and thought it was lymphadenoma.

[The members of the committee on microscopy reported on the glands as follows:

DR. ACKER: I find that the cells are increased in number, and the reticulum thickened. Some of the cells are large and multinuclear. In some of the sections the sinuses and follicles cannot be seen. The adventitia of the vessels is thickened. The growth is, I think, a hard lymphadenoma or lymphosarcoma (Ziegler).

DR. SCHLEFFER: I think the tissue is an enlarged and infiltrated gland, showing the stroma and round cellular elements—no traces of malignancy].

DR. T. C. SMITH presented the stomach of a young man who had committed

SUICIDE BY TAKING "ROUGH ON RATS."

History.—A young man, æt. 19, ate his breakfast about 9 o'clock February 14, and then left home. About fifteen minutes afterwards he returned with a box, procured a glass, and went to the bath room. He went out again, but returned in about an hour and requested his brother to go to work for him. Soon after he began to vomit, and the vomiting soon became incessant, and he fell to the floor from exhaustion. About noon he told his parents that he had taken "rough on rats." The family sent for Dr. Smith, but he was not at home, so they got Dr. Warwick Evans to go to see the patient. Dr. Evans saw him four hours after the poison had been taken. Emetics of zinc and ipecac, dialyzed iron in large doses, and stimulants were given. Dr. Smith saw him about 1.30 o'clock. He was then in collapse. Whisky was freely administered hypodermatically, and hot bottles were applied, but he died at 4.30 P.M., seven hours after taking the poison.

Dr. Tyler made the necropsy. The kidneys were congested. The stomach was hyperæmic, and seemed to be denuded of its mucous membrane as if it were gouged out with some mechanical irritant.

Dr. Smith had presented the specimen for the sake of exciting some interest in the discussion of the subject in order to see if the society could not take some action to prevent the sale of this article which had become the popular drug for the suicide.

DR. BERMANN: It is useless to try to regulate the sale of such poisons as long as the druggists are allowed to sell poisons, for anybody can go into almost any drugstore and get the most deadly poison by simply asking for it. The law to be effective should prohibit the sale of poisons except when authorized by a physician.

DR. BUSEY: What is the composition of "rough on rats?"

DR. SMITH: The principal constituent is arsenic, but some contend that it also contains phosphorus and ground glass. It cannot contain phosphorus because that drug cannot be kept in a dry state, as in this preparation. He thought the principal ingredient was arsenic, because the directions given on the label for poisoning are similar to those commonly given in arsenical poisoning.

DR. KLEINSCHMIDT had a case of poisoning by "rough on rats" about six months ago. He asked Dr. Patterson, who had made the post-mortem examinations in fifteen or twenty cases, what he thought the poison consisted in, and he expressed the opinion that besides arsenic and phosphorus it also contained some mechanical irritant. He also suggested that there was no

use in trying to save them by remedies, as all that took the poison died. His patient died, but he could not get a necropsy. The specimen presented has a graty feeling. He thought the appearance of the intestinal tract in such cases gave evidence of an inflammatory condition produced by some mechanical irritant. In his case after the vomiting had stopped there still remained gastritis, of which he died.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Epistaxis of Brightic Origin—Talc in Infantile Diarrhœa—Value of Bichloride Solutions—Dangers of Intra-uterine Injections—Incontinence of Urine in Children.

At a recent meeting of the Société Médicale des Hôpitaux Dr. Gaucher read a paper on *Epistaxis of Brightic Origin*. These cases, he said, are very obscure, and the cause being unknown, it is often very difficult to arrest the hæmorrhage. A man aged 33 years, distiller, and alcoholic, was admitted into his ward in the hospital on the 20th of May last, with profuse hæmorrhage from the nose, which had been going on for three days and which had resisted plugging and the application of a blister to the hepatic region, in conformity with the recent theory that epistaxis is of hepatic origin. In the present case, however, Dr. Gaucher, suspecting a latent interstitial nephritis, examined the urine and found in it a great quantity of albumen. He prescribed an absolute milk diet and a mixture of the extracts of cinchona and of ratanhia. From that moment the hæmorrhage diminished progressively and on the 24th of May it had ceased entirely. It is therefore important, concluded Dr. Gaucher, that when one is in the presence of an epistaxis of an unknown cause, the urine should be examined. Dr. Huchard had under his observation for several years a patient in whom repeated attacks of epistaxis were the precursory signs of an interstitial nephritis which showed itself tardily. The patient was a man of 44 years, of gouty parents, and was gouty himself, presenting the characters of "arthritis." During his youth he had repeated attacks of epistaxis. In 1879 they were of a grave character, in 1882 one of the attacks was so severe that it was necessary to plug the nasal fossæ. It was only in 1883 that albumen commenced to appear in the urine. Since then the phenomena of interstitial nephritis dominated the scene. Transitory aphasia in 1884, dyspnœa and other uræmic troubles determined death in 1885. Dr. Huchard remarked that this case was interesting in regard to the repeated attacks of epistaxis and to the renal malady. The

author added that arthritis is to the arteries what rheumatism is to the heart. It acts specially on the arteries, as it always determines arterial hypertension and arterio-sclerosis.

At the same meeting Dr. Sevestre, Physician to the Children's Hospital, brought to notice the efficacy of *Talc in Infantile Diarrhœa*. He tried this substance, which was first indicated by Dr. Debove, in 7 children in his ward affected with that disease. The talc was administered in daily doses of from 20 to 30 grams mixed in milk, which succeeded in the cases where the bicarbonate of soda and lactic acid were powerless. Three children were cured in from four to five days, in the four others the diarrhœa had diminished and then disappeared about the seventh day. All the children had increased in weight.

Dr. E. Laplace writes in the *Journal des Connaissances Médicales* that, after a series of experiments, he found that solutions of the bichloride of mercury, in the proportion of a thousandth part, do not completely kill the microorganisms with which they are in contact. He attributes this to the production, with the albumens of insoluble compounds of the albuminates of mercury. In adding to the solution of the bichloride of mercury some hydrochloric acid, the albumen contained in the serum of the blood is not precipitated. Nevertheless, as the hydrochloric acid may after a time form with the albumens insoluble products, Dr. Laplace has replaced the hydrochloric acid by tartaric acid. Acting on these data, the author recommends the following solution for the washing of wounds: bichloride of mercury 1 part, tartaric acid 5 parts, distilled water 1000 parts. For antiseptic dressings he recommends that the bandages, linen and cotton, should be steeped in the following solution: bichloride of mercury 5 parts, tartaric acid 20 parts, distilled water 1000 parts. The cotton should remain about two hours in this solution, and afterwards dried. Clinical experience has confirmed the efficacy of these antiseptic solutions, and in one case in which the subject was affected with a large abscess, after having opened and washed out the latter, a plug imbibed in the bichloride acid was introduced into the purulent cavity. At the end of six days there was no more pus, and from that time the cicatrization was effected without suppuration.

In the *Nouvelles Archives d'Obstétrique et de Gynécologie*, Dr. Mangin, while vaunting the utility of intra-uterine injections, both as a prophylactic and curative measure, indicates the accidents which these injections are liable to cause. These accidents are of three orders. 1. Accident of retention, 2. septic accidents, 3. nervous accidents. The first order may be explained by the slow absorption of the liquid injected and retained in the uterine or vaginal cavity. By the penetration of the liquid into the peritoneum by the Fallopian tubes. By the direct penetration into the circula-

tion, by the venous sinuses of the liquid injected. This variety is no doubt the most common and at the same time the most terrible. The septic accidents, constituted by shiverings followed by fever, simulating a fit of intermittent fever, appearing always after a uterine irrigation and ceasing only when the injections are suppressed, are manifestly in correlation with these injections. The nervous accidents, which are always incriminated as soon as any complication after an injection arises, should be looked upon as exceptional. After having fully described the mechanism of the three orders of accidents, the author states that the nervous accidents are without gravity. The same cannot be said of the toxic and febrile accidents, which ought and can be avoided by certain precautions, the principle of which are: the choice of a catheter by which the return of the liquid is insured, and attention should be paid not to raise more than 30 centimetres above the bed of the patient the recipient containing the liquid.

Dr. Harkin, whose note on the treatment of incontinence of urine in children was reproduced in the *Revue Obstétricale et Gynécologique*, thinking that this affection is due to a congestion of the medulla oblongata during the horizontal position in bed, has employed dry cupping, or scarifying, in several cases, to the back of the neck, or a blister of 6 centimetres by 10 was applied as high as possible to the back of the neck. This last measure was the most frequently employed, and it was very rarely necessary to have recourse to a second application.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Causation and Treatment of Summer Diarrhœa of Infants—Microorganisms of the Stomach and Intestines in Summer Diarrhœa—Microscopic Appearances of the Stomach and Intestines in Summer Diarrhœa—Digestive Power of Pepsin—Action of different Agents on the Pus Germ.

The May meeting of the Section of Pediatrics of the Academy of Medicine was one of unusual interest, and the principal feature of it was a paper by Professor Victor C. Vaughan, of Ann Arbor, Mich., on *Experimental Studies on Some Points Concerning the Causation and Treatment of the Summer Diarrhœa of Infants*. Without attempting any exhaustive consideration of the subject, he said he would express the views which his investigations had led him to adopt in a series of propositions.

The first proposition was that the factor most frequently operative in summer diarrhœa is found in the food of the infant. Heat operated in two

ways. In the first place, a certain degree of heat was required for the fermentation of food before being taken into the body; this facilitating marked and rapid changes subsequently. In the second place, it depressed the nerve centres, so that the tissues lost their tone, and the normal power of resistance to toxic influences became impaired.

The second proposition was that the changes in the food which prove harmful are fermentative in character; or, in other words, due to microorganisms. It was a universally accepted fact that infants nursed at the breast were very much less liable to summer diarrhœa than those fed upon the bottle. In examining the reasons for this it was found that there were certain differences in the chemical composition of human and cow's milk; but this was not the most potent cause. It had been ascertained that milk taken directly from the healthy animal, whether the human being or the cow, contained no germs whatever; while after it had been allowed to stand for any length of time it invariably contained germs. Thus, he had found that milk taken fresh from the cow could be preserved indefinitely in a sterilized tube, while good market milk, purchased from a reliable dairyman, soon underwent coagulation when kept in the same way.

But if this were the case, why was it that infants nursed at the breast ever had cholera infantum or other diarrhœal diseases at all? This might be explained in several ways: In the first place, while a healthy woman's milk contains no germs, an unhealthy one's does; so that if the mother was not in a sound condition, her milk might be affected in the same way as cow's milk after standing for some time. There were, in addition, many other ways in which germs might find their way into the infant's system; as, for instance, from the breast of a woman who was not cleanly in her habits or who was suffering from sore nipples or diseased breast. Still again, few of the articles which infants in tenement houses were liable to come in contact with were free from germs, and dirty floors were a common source of infection. Lastly, there was always the possibility that harmful germs might be inhaled from the air.

It was true, however, that when germs were contained in the food they were taken into the system in greater quantities than in any other way, and it was remarkable how quickly a few germs would render a large quantity of milk unfit for use. Thus, if half an ounce of contaminated milk were introduced into a gallon of pure milk, and the whole left in a sterilized vessel at the temperature of the body, in a short time the entire quantity of milk would be contaminated and filled with germs. He had never seen anything to lead him to suppose that the germs of summer diarrhœa were given off by the lungs and skin; but there was abundant evidence that

they were excreted from the intestines and kidneys. It was, therefore, highly important that the discharges of infants suffering from diarrhoea should always be promptly disinfected. Physiological investigations, he went on to say, showed that the digestion of milk was almost entirely carried on in the small intestines, the stomach having little to do with the process; and clinical observations confirmed the truth of this.

The third proposition was that the microorganisms which produce simple catarrhal or mucous diarrhoea are only putrefactive in character, but those which give rise to choleric form or serous diarrhoea are more than putrefactive, being essentially pathogenic. Dr. Vaughan does not believe in the unity of the microbic agents met with in all the forms of summer diarrhoea. The choleric form disease differed, he said, from the catarrhal in its symptoms and its pathology, and there was also good ground for regarding it as differing in its etiology. The poison of choleric form diarrhoea acted directly on the nervous system, probably more particularly on the sympathetic system, while in catarrhal diarrhoea there was merely a local irritation. A study of the bacteria met with went to show, therefore, that there was more than one affection comprehended in the general designation, summer diarrhoea of infants.

The fourth proposition was that the bacteria prove harmful by splitting up complex compounds and elaborating chemical poisons. With our present knowledge of bacteriology we expected to find the germ of each infectious disease capable of producing its characteristic ptomaine; and he was convinced that the ptomaine of cholera infantum was tyrotoxin. While the germ producing this ptomaine had not as yet been identified, however, we knew something of its characteristics. Thus, it did not act below a temperature of 60° F., and it was anaerobic. That tyrotoxin was the ptomaine of cholera infantum was rendered highly probable by the symptoms and anatomical lesions produced in animals by this agent. The following are among the reasons, then, for regarding it as the ptomaine of the disease:

1. Tyrotoxin results from the putrefaction of milk, and cholera infantum is almost entirely confined to milk-fed children and those subject to conditions favorable to the development of this ptomaine.

2. Tyrotoxin has been found in milk taken by children just before an attack of cholera infantum.

3. The symptoms of the disease continue to increase as long as the administration of milk is kept up.

4. The symptoms of the disease are identical with those produced in animals by tyrotoxin.

5. The post-mortem results are also identical.

The fifth proposition was that the most efficient treatment will consist in giving attention to the

preparation of food, the methods of feeding, and the sanitary surroundings of children under the age of 2 years. There could be no doubt of the fact that the infant digests the milk of the mother or wet-nurse better than cow's milk. It was also a fact that mother's milk contains more fat than the child could utilize. Artificially fed infants were more likely to be overfed than those which were nursed, because in the case of the latter the supply of nourishment was limited and not so easily obtained. This overfeeding rendered the child more subject to harmful influences, and the proteids taken into the system which could not be assimilated were constantly liable to contamination by bacteria. Dr. Vaughan then went on to say that he objected to complete artificial digestion of food, 1, because, if this was continued for any length of time, the digestive organs would become permanently enfeebled, and 2, because the too rapid absorption of peptones was injurious. The long-continued use of artificially digested food was, therefore, irrational and unscientific. In order to protect children as far as possible from the danger of cholera infantum, great care was necessary in the preparation of their food, and he had elsewhere laid down certain rules for the preservation of milk which seemed to him of service towards this end. As to the need of attention to the sanitary surroundings of infants he thought it was scarcely requisite to say anything on this occasion, as all were so fully alive to its importance.

The sixth proposition was that, in the curative treatment, the destruction of the bacteria which are causing the abnormal fermentation is essential. How, then, could this destruction be accomplished? One of the surest methods of destroying the life of any plant or animal was to completely withhold its food supply. A radical change of diet, consisting of the entire exclusion of milk, and the substitution for it of a meat diet, was, therefore, one of the most certain methods of relieving the system of these deleterious bacteria, and curing the disease due to their presence. He had found that if contaminated milk was added to beef-tea or to egg-albumen, and the liquid then left in sterilized vessels at the temperature of the body, the number of bacteria did not increase; thus showing that they could no longer produce their chemical poison, tyrotoxin. In milk, however, these bacteria found the most favorable conditions for their development and the production of their ptomaine. In summer diarrhoea, and especially cholera infantum, the withdrawal of all milk from the child was, therefore, of the greatest importance.

In addition to this change of diet, various antiseptic agents might be employed in the treatment; and in order to discover which were the most efficient, Dr. Vaughan had made a series of experiments for the purpose of testing the action of different germicides, or supposed germicides, on

tyrotoxicon; the drug under experiment being introduced into a bottle containing milk and the poisonous ferment. In this way he ascertained that 1 part of bichloride of mercury to 2,400 parts of water was efficient in neutralizing the poison. One part of naphthalin to 200 parts of water was wholly without effect, while 1 part of sodium salicylate to 200 parts of water was efficient. It seemed probable, in the latter case, that the constituents of the salt became separated, and that salicylic acid was in reality the active agent. Resorcin, in the proportion of 1 part to 200 of water, was likewise efficient, but was inefficient when used in a weaker solution than this.

Dr. Vaughan's paper was followed by one from Dr. W. D. Booker, of Baltimore, on the *Microorganisms of the Stomach and Intestines in Summer Diarrhœa*, in which he stated that since he read his paper on this subject before the Section of Diseases of Children of the Ninth International Medical Congress he had discovered several new forms of bacteria; so that he had separated in all twenty-three varieties from the dejecta of nineteen children suffering, with one exception (a healthy infant), from diarrhœal diseases. Many of the varieties, however, bore a close resemblance to each other, both morphologically and biologically. Having described the microscopical changes and the changes in color produced by the introduction of the various bacteria into pure milk and milk mixed with bile in large and small quantities, he stated that none of the varieties produced diarrhœa in animals, although some of them had other toxic effects.

Dr. L. Emmett Holt then read a paper describing the *Microscopic Appearances of the Stomach and Intestines in Summer Diarrhœa*. His observations included eighty-two cases, which he divided into the following three classes: Those in which the disease lasted four days, or less; those in which it lasted from four to ten days; and those in which it lasted over ten days, the latter constituting fully one-half of all the cases. He then went on to describe in detail the microscopical appearances in the three classes of cases, which were illustrated by a number of carefully prepared plates, and which went to show that the longer the disease lasted the more profound were the pathological changes in the tissues. In the third class, then, often deep ulcerations, and severe character of the lesions in general, clearly indicated why it was that in protracted cases relapses were so apt to occur, and how necessary local treatment was for the cure of the intestinal ulcerations.

The chairman of the Section, Dr. J. Lewis Smith, having read the report of the microscopical appearances noted by Professor Wm. H. Welch in a case which had occurred in his service at the New York Infant Asylum, gave the results of an investigation made at his request, by a well-known chemist, of the relative digestive power of the vari-

ous brands of pepsin now in the market. The same chemist, he said, had also made a series of experiments for the purpose of ascertaining what effect, if any, the different germicidal agents now coming into vogue in the treatment of summer diarrhœa had on the process of digestion; and it was a point of some practical importance to know that these agents do not appear to retard digestion to any extent that would lead us to hesitate on this account to employ them.

Dr. A. Caillé said that the practical outcome of the evening's discussion was about as follows: If we admit the bacterial origin of the summer diarrhœa of infants we must admit that its principal cause is to be found in milk; and if this is acknowledged, we are forced to the conclusion that the ordinary methods of preparing and preserving milk are altogether faulty. At the February meeting of the Section on Pediatrics he had called attention to the apparatus devised by Dr. Soxhlet, of Munich, by means of which the preparing and feeding of sterilized milk can be readily carried out in every family. Since the February meeting a New York firm, at his suggestion, had prepared an apparatus (which they were now ready to supply in any desired quantity) similar to that of Soxhlet, consisting of a tray holding ten feeding-bottles with combination stoppers, and a pot to boil them in. These, together with extra bottles, rubber nipples, a cleaning-brush and a tin dipper for warming the milk immediately before feeding, were all packed in a box ready for transportation. In using the apparatus each bottle is filled to one-half inch of its neck with the food, properly prepared in accordance with the age and condition of the infant, and a perforated rubber stopper pressed well into the neck of the bottle. The bottles are then set in the tray, and the tray in the pot containing water up to the neck of the bottles, and the water is brought to the boiling point. After the water has boiled for ten minutes each bottle is hermetically closed by pressing a glass stopper down through the perforated rubber stopper. When the boiling is continued for ten minutes longer the tray is lifted out and set aside to cool; after which it should be kept on ice or in a cool place until all the milk has been used. Milk prepared in this way can be kept sweet and pure for any length of time required.

The apparatus, Dr. Caillé said, could be purchased for \$4, but as this was probably too expensive for the poor, he would recommend that a mother who was unable to buy one should get six or eight bottles provided with the combination stopper, and boil the milk for her infant (as prepared for use) in them.

Dr. J. E. Weeks said that a year ago he had made a series of experiments in regard to the action of different agents on the pus germ. He found that salicylate of sodium was inert, while salicylic acid was actively germicidal: and he had

lieved, therefore, that Prof. Vaughan was right in concluding that in his own experiments the salt became changed, and that its germicidal value was really due to the salicylic acid that was liberated. Naphthaline he found germicidal in rather strong solutions, while bichloride of mercury stood rather high. Nitrate of silver also stood high.

In bringing the discussion to a close Dr. Vaughan said that in his own experiments it was probable that the lactic acid present set some of the salicylic acid free from the sodium salicylate. In Dr. Weeks' experiments, there being no such agent present, the salt would naturally remain unchanged. As to the practical use of germicides in the treatment of summer diarrhoea, the dose of the bichloride of mercury required would be about one-twenty-fifth of a grain, and as this seemed rather large for young infants, it would no doubt be safer to give five grains of salicylate of sodium, which according to his tests was the dose this agent required for the purpose desired.

Dr. Smith having inquired whether it was a fact, as supposed by some, that calomel was changed into the bichloride of mercury after being taken into the system, Dr. Vaughan replied that this was undoubtedly the case with a certain proportion of the amount taken, and it was probable that the change was especially likely to take place when the calomel was given in small doses.

P. B. P.

SHALL I REMOVE TO THE CITY?

Dear Sir:—In May or June the practice of the country physician grows light and a needed rest is enjoyed after the arduous labors of the early spring. Then the doctor gets his books posted, makes out his birth and death reports, brushes up his office and musters courage to present some of his bills.

He remembers that tradesmen have presented their bills to him with commendable promptness and wonders why the medical profession alone conducts business in such a lax and unbusiness-like manner.

After familiarizing himself with the appearance of a statement in which he is creditor he concludes it will not ruin his business to send out a few of these statements by mail. The first lot are probably sent to long-time delinquents who have found it cheaper to change doctors than pay up. Next the doctor meets a man on the street and reminds him that it is time to settle, and with the account in his pocket, perhaps, he asks him to the office to see how much it is. After he has made a few collections and feels less like a pauper he puts on a bolder front, begins in earnest, and as the exchequer is replenished the tired feeling he thinks he has had so long, wears off and "Richard is himself again."

Now it is time to attend some of the annual society meetings. The County District, State or National Medical Associations are in session and the doctor, from interest in the work and want of recreation, goes to the city.

Meeting the city physicians with their apparent advantages of being in the range of medical colleges and hospitals and the city societies in which interchange of ideas among the best of the profession enlarges medical skill, the strong temptation comes to remove to the city. The ease with which professional work is done stands out in marked contrast with the drudgery in mud and rain through which the country doctor has just passed. The greater social advantages, the better fees and the possibilities of specialty practice all conspire to tempt the ambitious young man almost to the point of yielding.

Wealth is concentrated in the cities. The best price is paid for goods of the best quality there. The successful merchants of the towns frequently go there to recruit the ranks of city merchants. The best ministerial talent is called there at an increased salary. Why should not the doctor go? Obviously we cannot all go, and it is the city's immense advantage that we cannot. A great many do go from the larger towns throughout the country and the eminence of a few attest the wisdom of the change for them. Where the ambition that spurred them on was based on superior judgment and a degree of skill commensurate with the years of study and experience, success has crowned their efforts. Of the multitude of failures we hear nothing. With the physician, however, as compared with the case of the merchant or minister there is a great difference. The merchant uses his acquired capital, gets a good location and stock, and a few page advertisements puts his business on a self-sustaining basis.

The minister called to the city has his congregation as a constituency awaiting him, and a church reception makes him at home among his people.

The doctor may have a reputation at his present place, but it has the faculty of staying close home. His work in the journals or societies may have made his name familiar to the best of his city co-workers, but it is not their special province nor care to introduce him to the people, the source of his expected income.

Privilege to advertise cannot help him, already quacks enjoy that and are adepts in its use; and the abandonment of the time-honored regular methods would be a damaging confession. The new doctor in the city then must begin at the bottom and go through the drudgery of building up a business anew with no advantage over the new graduate except so far as his savings, his experience and acquaintance may help him to a comfortable location and professional standing. In the vast majority of cases, had the doctor not

better avoid the city? He who succeeds in the country or larger towns can do still better than if his ambition impels him to improve his business. He can have the world for an audience if he has anything of universal interest to say. If he desires it he can extend his field of labor almost indefinitely if there is anything he can do better than his professional brethren. His expense account may usually be smaller than that of his city friend in proportion, as his town is smaller.

The out-door work which is often a ground of complaint may perpetuate a vigorous physical state that a city office might ruin. A family vigorous in the free air of a country-home may suffer in bodily health, possibly in moral tone, from the different atmosphere of the city.

Years of acquaintance and established business enable the country physician to select his cases and avoid the most laborious work, except where compensation is adequate. The years he has spent, instead of being virtually lost through removal, constitute so much capital which shall contribute to his comfort and gain as the years go by; and judicious investments made in the years of prosperity obviate the need of hard work in old age.

In the more varied demands of the country practitioner more study is required to cover the larger field of work, but by way of compensation has he not the consciousness of being a more useful member of his community?

COUNTRY DOCTOR.

MISCELLANEOUS.

THE RAINS COUNTY (TEXAS) MEDICAL ASSOCIATION was organized on June 20, with Dr. J. F. Bertram, of Yantis, President, and Dr. E. A. Sweptson, of Point, Secretary.

THE KENTUCKY STATE MEDICAL SOCIETY met at Crab Orchard Springs on July 11, 12, and 13. Dr. L. S. McMurry, of Danville, is the President for the ensuing year.

THE TEXAS MEDICAL COLLEGE AND HOSPITAL has been organized at Galveston, and it is thought that it will open in October. It will require three year's study and three full courses of lectures.

THE MEDICAL AND SURGICAL SOCIETY OF WESTERN ILLINOIS will hold its next regular meeting in the Court House at Jerseyville, Wednesday, August 1. Morning session 10.30; afternoon at 1.00 o'clock.

DR. CHARLES W. PURDY, of Chicago, was married to Miss Florence Elise Hoffman, daughter of Mr. George W. Hoffman, of Oak Park, Ill., on Tuesday evening, July 24, at Grace Episcopal church, Oak Park.

AT THE COMMENCEMENT EXERCISES of Union College, June, 1888, the honorary degree of LL.D., was conferred upon Mr. Lawson Tait, F.R.C.S., Professor of Gynecology, Queen's College, Birmingham, England.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its sixth annual meeting at Cincinnati, on September 12,

13 and 14, 1888, under the Presidency of Dr. C. H. von Klein, of Dayton, O. The subjects for discussion are: Etiology and Pathology of Nasal Diseases; Relation of Nasal Diseases to other Diseases, including the Brain and Nervous System; Treatment of Nasal Diseases by Local and Constitutional Medication; Treatment of Nasal Diseases by Surgical Means; and Hay Fever (Pruritic Rhinitis), Pathology and Treatment. A large number of papers will be read on these subjects.

AMBULANCE INSTRUCTION FOR RAILWAY MEN.—The Mayor of West Ham recently presented certificates and badges of the St. John Ambulance Association to fifty-three employes of the Great Eastern Railway at Stratford. During the winter two courses of instruction were given at Stratford by Dr. Louis Parkes, medical officer of the Great Eastern Railway Accident Fund, special attention being given to practical bandaging work. Over 4,000 men are employed by the railway company at their Stratford Locomotive Works, and the advantages of having certificated men amongst this number to render first aid in cases of accident are highly appreciated, both by the railway authorities and by the men themselves. It is very desirable that a proper ambulance corps should be formed in these large works.—*British Medical Journal*, July 7, 1888.

NEW BOOKS RECEIVED.

The Goulstonian Lectures on Insanity in Relation to Cardiac and Aortic Disease and Phthisis, by William Julius Mickle. Publisher, H. K. Lewis, London.

The Applied Anatomy of the Nervous System, by Ambrose L. Ranney. D. Appleton & Co., New York.

A System of Obstetrics by American Authors. Edited by B. C. Hirst. Vol. I. Lea Brothers & Co., Philadelphia.

Practical Electro-Therapeutics, by Wm. F. Hutchinson. Records, McMullin & Co., Philadelphia.

Physicians' Leisure Library, No. XI. The Disorders of Menstruation, by E. W. Jenks. Published by George S. Davis, Detroit.

The Ethics of Marriage, by H. S. Pomeroy. Prefatory Note by T. Addis Emmett, and Introductory by Rev. J. T. Duryea. Funk & Wagnalls, New York.

Die Stielbehandlung bei der Myomotomie. Von Dr. Paul Zweifel. Stuttgart: Ferdinand Enke. 1888.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 21, 1888, to July 27, 1888.

Thomas A. McParlin, Surgeon U. S. Army, leave of absence extended one month. Par. 10, S. O. 160, Dept. of the Platte.

Surgeon William D. Woolverton, U. S. Army, leave of absence extended twenty days. S. O. 142, Hdqrs. Div. of the Atlantic.

Asst. Surgeon Joseph K. Corson, U. S. Army, leave of absence for one month, with permission to apply for an extension of one month. S. C. 78, Hdqrs. Dept. of the Columbia, Vancouver Bks. W. T., July 13, 1888.

Capt. William B. Davis, Asst. Surgeon U. S. Army, will proceed to Ft. Niagara, N. Y., for the purpose of completing his target practice for this year with Company C, Twenty-third Infantry. Upon completion of this duty Capt. Davis will return to Ft. Porter, N. Y. S. O. 145, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, July 17, 1888.

First Lieut. Leonard Wood, Asst. Surgeon, U. S. A., is relieved from duty at Ft. Huachuca, Ariz. Ter., to take effect at the expiration of his present leave of absence and will report to the commanding officer at Ft. M. Dowell, Ariz. Ter. Par. 11, S. O. 162, A. G. O., July 14, 1888.

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 4, 1888.

No. 5.

ORIGINAL ARTICLES.

FOOD AS A CAUSE AND CURE OF DISEASES OF THE NERVOUS SYSTEM.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY EPHRAIM CUTTER, M.D., LL.D., HON. F.S.Sc.,
LOND.
OF NEW YORK CITY.

The aim of this paper is simply to tell how, when I was anxious to be set right, it was done. This was one of the tasks set me by my father, the late Dr. Benjamin Cutter, before I entered upon the study of the profession, when I asked to study the causes of disease. Were he living now, after the lapse of about thirty-five years, he would rejoice in the progress made, and if any advantage is derived from this presentation, it is due to his wise advice expressing medical agnosticism as to the causes of diseases of the nervous system.

Food as a Cause and Cure of the Neuroses.—This may seem paradoxical. A knife carves your dinner and cuts your throat. Water is essential to life and health, but to hold a man under it for five minutes is unhealthy. Fire cooks our meals and burns our houses. Without food, life ceases; but food produces colic, convulsions, fatty degeneration of tissues, numbness, paralysis, locomotor ataxia, impaired intellect, etc., sometimes death. On the other hand, food may be used to restore health to the nervous system.

To be sure, the nerves are implicated more or less in all diseases, as they pervade every organ, even the teeth, and without them there is no life. Food is just as pervasive. It enters into the treatment of all diseases and surgical affections. No food, no life.

The following diseases, in my opinion, are a good deal neurotic, though not so understood:

1. Consumption of the lungs is partial paralysis and interstitial death. The paralysis arises mainly from the carbonic acid in the intestines, which paralyzes the epithelia of the intestinal walls and makes them admit things into the blood they were meant to keep out. The food fermentation produces the gas.

2. Chronic diarrhoea or consumption of the bowels is also one form of the above. The col-

loid masses of sticky, adhesive and gelatinous mucus come from partially paralyzed mucous cells, and just the same in

3. Goitre, ovarian tumors, etc.

4. Neurasthenia in men is a paralytic disease induced by a catarrh of the spermatic and prostatic ducts caused primarily by fermenting food.

5. Pharyngitis sicca and many of the throat affections are due to improper feeding.

6. Constipation, I think, is often due to a lack of nerve force in the food, etc.

Our subject is limited to special feeding and their neurotic results. These are practical clinical questions. They can be studied by physicians on their own persons, and there is no difficulty in practically verifying the statements to be made. If any choose not to accept these dicta, it is asked that they will not reject them before thorough personal tests are made; as farmers test agricultural questions on their own farms. Several sets of evidence should be had; so if several gentlemen conclude to make tests, they should combine their evidence and base the final decision on the sum of their evidence.

To be more particular, what affections of the nervous system do baked beans produce? I think it best to quote from a work in which the subject is fully reported,¹ (see note), which I endorse, and which may be referred to by those that wish to explore a mine of invaluable research as to foods.

The author in 1854 fed on baked beans and coffee exclusively—in sedentary life. In three days his head was dizzy, his ears rang, his limbs prickled, and he was wholly unfitted for any mental effort. There were other important clinical results, but only the neurotic will be given in this paper. In 1856 he repeated the experiments on himself associated with six well and hearty men—laborers, selected from about 100 subjects—hired to live with him on this diet, in sedentary life. The following are the symptoms affecting the nervous system: Diet, baked beans and coffee at meals; cold water midway between meals. *Résumé* by days for brevity.

Third day. Colic in three men; ears ring and dizzy in two; head swims in one.

¹ NOTE. "The Relation of Alimentation to Disease." By J. H. Salisbury, M.D., LL.D. New York: J. H. Vail & Co., 1888.

Fourth day. Ears ring, dizzy, colic, heads swim.

Fifth day. Ears ring, all; colic, five; bewildered and confused, three.

Sixth day. Colic, five; ears ring, five; dizzy, five.

Seventh day. All dizzy and ears ring. Deafness in one. Confused and bewildered, five.

Eighth day. Hands and feet prickle; feel strangely and confused.

Ninth day. Hands and feet prickle; bewildered.

Tenth day. Hands and feet numb; dizzy.

Eleventh day. Heads feel empty, eyes staring. Strange, much bewildered, ears ring.

Twelfth day. Walk as if intoxicated. Head numb and vacant; feel lost; feet and hands prickle.

Thirteenth day. Hands numb. Reel in walking. Gait unsteady; feel weak and exhausted, forgetful and feel strangely; legs and feet numb; feel drunk.

Fourteenth day. Feel intoxicated. Legs and feet numb. Ears ring, dizzy, head vacant, eyes staring; numb, reel in walking, gait unsteady.

Fifteenth day. Walk with difficulty, feel drunk and lost. Hands and feet prickle, stagger in walking, feel light-headed.

Sixteenth day. Ears ring. Bewildered, eyes vacant, head dizzy. Tired and strange; feet drag; hips, feet and legs numb.

Seventeenth day. Feet and hands prickle; legs and feet numb; gait unsteady. Feel very weak and bewildered, reel in walking, feet drag in walking; eyes vacant and glaring.

Eighteenth day. Walk with difficulty. Weak and smothering feeling at times; cannot walk straight; feel as if they could not breathe freely, heart palpitates on exertion. Nervous; feet drag in walking; heart pains.

Nineteenth day. Experiments suspended, as men were so forlorn and dilapidated.

Cure.—These cases were all cured in four days by a diet of broiled lean beefsteak freed from fat and white fibrous tissue and seasoned with butter, pepper and salt; clear tea and coffee for drinks. This was because the symptoms were acute.

Oat-Meal.—Four well men, laborers, while in sedentary life, lived on oat-meal porridge seasoned with butter, pepper and salt, cold water for drinks between meals, coffee with sugar and milk at meals. To save space this is given as one report. 1857. Nervous symptoms found:

Third day. A dull, heavy feeling for all.

Fourth day. Slight colic.

Eighth day. Head dull, aching, dizzy. Colic; bewildered; ears ring.

Ninth day. Feet prickle. Ears sing.

Tenth day. Dull and stupid, dizzy, headache, colic, feet and hands prickle, abdomen lame as if bruised, pain in back, feet and hands prickle.

Eleventh day. Pain in head, ears ring; limbs heavy; stupid and dull. Breathing oppressed on exertion. Head dizzy and mixed, memory poor; lazy.

Twelfth day. Cardialgia. Feet cold; forgetful; colic; head confused; feet and hands prickle; back weak; singing in ears. One thinks he is getting crazy. Feet and hands partially numb.

Thirteenth day. One thinks he is losing his mind. A choky feeling while swallowing. Awoke very tired, head mixed, feet and hands numb, heart irregular.

Fourteenth day. Sleep heavy and bad dreams. Head bewildered, hands and feet prickle, nightmare, reels in walking, back aches, unsteady in walking.

Fifteenth day. Bad dreams, stupid on rising. Ears ring; forgetful. Legs not under perfect control, unsteady in walking. Stupid; sleep disturbed.

Sixteenth to twenty-fourth day. Head more mixed and confused, eyes blur in reading. One "feels as if his mind was giving way." Frightful dreams, colic pains, numbness and weight in limbs, eyesight growing dim, neuralgia all over. One sometimes sees double. Some imagine they see snakes, devils and bad characters. Talk in sleep; loss of control of limbs.

Twenty-fifth and twenty-sixth days. Memory poor, deaf, head confused, heavy, obtuse, lower extremities numb and clumsy. One reels in walking, soles feel cushioned; memory poor.

Twenty-seventh day. Voice weak and husky; legs and feet numb; head dizzy and mixed. Confused; eyes wild and staring; cushioned soles; sciatic pains; backs ache; hearing impaired; legs numb and clumsy.

Twenty-eighth and twenty-ninth days. All these symptoms aggravated.

Thirtieth day. Stopped experiments for prudence's sake.

Thirty-first to thirty-fourth days. Cured by feeding on broiled beefsteak, tea and coffee.

Besides these our author experimented similarly with bread, rice, wheaten grits, hominy, tapioca, sago, potatoes, green peas, string beans, green corn, beets, turnips, squash, asparagus, vinegar in excess and the various meats, on four to six men in groups, at times lasting seven to forty-five days. The results in all cases were recorded and tabulated as in the bean and oat-meal experiments. He says, page 207, lines 9-16: "To go through all my food experiments in detail would make this treatise far too voluminous to be read and studied, except as a work of reference. This would defeat my desire of getting it into the hands of as many students as possible in the opening of their career, directing their attention, as well as that of all earnest thinkers, whether in the profession or out of it, to the urgent necessity of dietetic reform, and to the real nature of most of our di-

eases, based as they are upon departures from dietetic laws indicated by the organic structure of man."

Of the meats—eggs, fish, pork, veal, chickens, turkeys and game, after a limited time produced more or less distress about the stomach, much sickness and weakness, with great heat and bewilderment in the head. He calls this "meat dyspepsia."

He found that the vegetables, bread, rice, wheat-en grits, hominy, sago, tapioca and potatoes were fed singly for forty to forty-five days before neuroses were caused, and hence are most desirable for neurotics.

The crowning result of his auto-aliotic experiments was that beef was the only food that adults could live on continuously for years—that beef cured all other neurotic symptoms developed in the healthy persons experimented on, in a short time; simply adding hot water to wash out the alimentary canal and keep up normal peristalsis, and prevent the lodging and consequent fermentation of the food therein. Please remember these were *acute* cases without organic lesions, and hence easy to cure by stopping the cause. Had they been chronic cases they would not have got well so soon.

For simplicity, thoroughness, positiveness, extent and practicability, these food experiments are in my opinion unparalleled. They are so simple that any one can verify them, as said before, and their intimate relation to the treatment of neuroses, to name no more, entitles them to the careful consideration of all who are concerned in any way with the practice of medicine. The details can be had.

The Relation of Albumen, Starch and Gum to the Neuroses.—In the Transactions of this Association for 1857, Dr. Wm. A. Hammond contributed a prize essay: "Experimental Researches Relative to the Nutritive Value and Physiological Effects of Albumen, Starch and Gum when used singly and exclusively as Food." Though the author used only himself for experimentation, still his results are in place here. He lived ten days on albumen obtained from the serum of bullock's blood boiled well and washed with water.

Third day. "In the evening I had slight pains in the lower part of the abdomen and quite severe headache. Both disappeared after the first passage from the bowels. My sleep was unquiet in the early part of the night and I awoke with headache."

Fourth day. Severe headache with fever. Feeling of debility in the system. Singular sinking sensation at the epigastrium; nausea. Pains in lower part of abdomen very severe.

Fifth day. Was quite restless in the night and felt chilly towards morning.

Sixth day. Increase of debility; headache and abdominal pain not present. Hard work to eat

Seventh day. Weaker.

Ninth day. Sleep very unquiet.

Tenth day. Debility extreme, intellect somewhat confused, sleep restless. Experiment ceased. All bad results removed by "proper diet."

Corn Starch. Neurotic Symptoms.—Fourth day. Good deal of debility, mind inactive, great indisposition to physical exertion. Oppression about lungs relieved by long breaths. Dreams of falling from precipices frequent; awoke several times with a sudden start. Saliva thick andropy.

Fifth day. Mind dull and it required an effort to fix it on any subject. Chest oppression increased, sighing respiration frequent, slight palpitation of the heart, pain in abdomen, flatulency. Awoke with a most intense pain over left eye. Free giving of magnesia relieved it instantly, showing acidity of stomach as the cause.

Sixth day. Debility; torpor of bowels. Mental phenomena unchanged, chest oppression somewhat less, palpitation very annoying.

Seventh day. Palpitation very troublesome, debility excessive, specially in dorsal muscles. Awoke with severe headache; slept ill.

Eighth day. Violent headache all day; numb, somewhat confused, almost constant twitching of left upper eyelid which was very annoying. Gripping pains in abdomen. Palpitation less violent and frequent.

Ninth day. Same as those of eighth day.

Tenth day. "The immediate effect of the slight abstraction of blood was to relieve the feeling of oppression at the chest, but in an hour it returned with increased violence. The debility was very great." Experiment ended. "Ordinary diet renewed with some degree of caution. After a few days I became free from all unpleasant symptoms and rapidly regained my usual good health."

Diet of Gum Arabic and Water Alone.—Experiments could not be continued over four days on account of the derangement of health.

First day. "I had severe colicky pains in the lower part of abdomen after eating the second meal of gum."

Second day. Good deal of debility, hunger and weakness soon after meals. Abdominal pains more severe after eating. Unpleasant dreams, disturbed sleep, severe headache on awaking.

Third day. Extreme debility and hunger; headache; obliged to lie down during afternoon; abdominal pains annoying. Restless at night, little sleep, awoke unrefreshed.

Fourth day. Hunger and debility great, severe abdominal pains for nearly twenty-four hours, tenderness of abdomen on pressure. Hunger not relieved by eating gum. All study omitted; physical exertion trifling; did not sleep well. Stopped experiment, unable to longer refrain from other food.

Fifth day. Great weight and pain in rectum. The writer says: "As an article of food for

the sick, gum arabic should be especially condemned." His closing paragraph is as follows: "In an essay of this character, whose chief aim is to add to the sum of knowledge, the labors of others could at most receive but a slight notice, and must of necessity frequently be passed over without even a word of recognition, yet no one appreciates more highly than myself the self-devotion and constant striving to enlarge the bounds of science which animate so many physiologists of the present day, and which have already yielded such brilliant results. Had I, however, attempted to do justice to even a tithe of their contributions, I should have converted this memoir into a treatise, and might have lost sight of all originality in my efforts to make successful compilation. With what success I have prosecuted these inquiries is not for me to determine. I cannot, however, think them valueless, for, if they only excite others throughout our land to investigate in living beings the operations of nature, they will still be beneficial to the cause of that science which constitutes the basis of all medical knowledge. From the united labors of those who seek by original investigation to build up a positive science, where there is yet so much darkness and uncertainty, what may we expect? May we not confidently look forward to the perfect enlightenment of our minds in regard to the most obscure of the vital processes? Though we may often be led astray by experiments conducted without due care, and with insufficient knowledge, they yet afford the only means by which we can successfully work out the sublime problems which the great Creator of all has prepared for our solution."

These researches accord with the practical idea that colic, headache, confused intellect, laziness, bad dreams, epilepsy, convulsions sometimes and other neuroses are connected with improper feeding, and cease when this cause is removed. Children have died from eating raisins, which proved too much of a digestive problem for the nervous system to solve, overwhelming it by its difficulties. But we wish to go a step further, and assert that affections of the nervous system depending on fatty degeneration and fibroid development have their primal cause in food, as pointed out by Salisbury (*loco citato*). Among them we name paralysis, partial or complete, hemiplegia, paraplegia, apoplexy, sclerosis, hyperæsthesia, anæsthesia, etc. Here there is structural change of the arteries or nerve sheaths, where normal tissues, as the muscular arterial coats, are replaced by fat or fatty deposits and a thickening of the fibrous tissues of the nerve sheath, to name no more. The arteries are weakened, yield to blood pressure and rupture, blood is poured out, pressing on the immediate neighboring structures and causing the paraplegia or hemiplegia, or instant death, according to where the pressure comes.

The thickening of fibrous sheaths of nerves comes from a low vitality produced by food which does not have pabulum enough to make good tissue, or from fermentation producing the paralyzing gases of carbonic acid or sulphuretted hydrogen, etc. If one doubts he has only to inhale continuously either of the gases, cautiously, for death might ensue.

The effect of this paralyzing is to produce fatty degeneration by disuse—though it should be added that "fatty degeneration affords time for repentance and reform," and is a preservative process, as, without it, destruction would come sooner. All diseases of fatty degeneration besides those named—as Bright's disease of the kidneys, fatty liver, heart, lungs, etc., are intimately connected together as neuroses caused by paralyzing foods. This rather clashes with conventional terminology; but curing disease is more than terminology. As knowledge grows, nomenclatures are changed to accommodate the increase.

Sclerosis comes in the same category with goitre, ovarian and fibroid growths, outcomes of the growths of half-dead and semi-paralyzed tissues which are starved and numbed on improper alimentation. The cure lies in the food. The main element is having it well digested. Any food that is well digested by any person in health is a good food for that person, but any food that ferments into alcohol, carbonic acid gas, vinegar, sulphuretted hydrogen, etc., is not a good food for that individual. So, in affections of the nervous system, the main thing is to stop the causative foods and substitute those that will digest, and not paralyze the nerves (the glandular structures specially), and will furnish elements for new and healthy structures. Nature then cures. Medicines, baths, massage, etc., are the adjuvants and assistants to the *vis medicatrix nature* which runs the system and takes considerable time to repair the ill results of bad feeding which has been going on for many years.

Experiments with 1,028 hogs fed on sour distillery slop. (See "The Relation of Alimentation to Disease," *loco citato*.)

General Remarks.—In all the hogs experimented with, paralytic symptoms began soon after bloating and constipation till past the eighth week, when one-fourth were dead. By that time the others begin to eliminate the vinegar faster than it comes in.

Neurotic Symptoms: Gradual weakening of the limbs, labored breathing on moderate exertion; tendencies to stagger and reel. Often dragging hind legs and singing in the ears, shown by a frequent shaking of the head and lopping ears but the lower.

In 254 fatal cases, loss of control of all the hind parts so that they were often unable to walk or even stand without support.

1858. October 4, 624 hogs, healthy, fed on -14

Thirteenth to Nineteenth days. Dizziness, ringing in ears, slight reeling in hind legs—in all.

Twentieth day. One hog refused to eat; was partially paralyzed, reeling in walking, nose to the floor, head held to one side and shaking it frequently. Indifferent. Partially deaf and blind. At 10 A.M. it fell over on its side. Surface became blue. Breathing short and labored. Died at 12 M.

October 22. Four hogs died to-day. Became cyanotic and very much oppressed for breath and paralyzed before death.

Case I.—Twelve hours before death ceased to eat, became listless, dumpish, and insensible to surrounding objects. Eyes dull, heavy and glassy. Staggered about. Soon the surface became blue, the hind parts paralyzed, and the animal unable to longer walk, fell over and died.

Case V.—Partially paralyzed at 8 A.M., Nov. 3. Died at 11 A.M. Meningeal vessels and sinuses gorged with blood but not connected with the paresis.

Case VI.—Died at 12 M., Nov. 3. Staggered as it walked for several hours before death. Reeling behind. Meningeal vessels and sinuses gorged with blood.

Case VIII.—Died Nov. 4, 8 A.M. Sluggish yesterday afternoon with nose to the floor. Reeling. Appeared blind and deaf. Brain congested highly. Meninges gorged with blood.

In one month 56 hogs died on slop feeding.

Case X.—Nov. 2, refused food, became listless, gradually more and more paralyzed, blind and deaf. Fell over and died suddenly at 1 P.M., Nov. 1. Brain and meninges congested with slight exudation of serum.

Case XI.—Nov. 3, P.M. Ceased to eat. Nose held to floor. Reeled in walking. Held head to one side with one ear lopped, often shaking the head. 12 M. fell over, and died at 3 P.M.

Case XVII.—Nov. 5, A.M. Early ceased to eat, became dumpish; nose to floor; reeled in walking; head held to one side; left ear lopped; shakes head frequently. 4 P.M., fell over on one side and began to twitch spasmodically with general tremor before death. Meningeal vessels gorged with clotted blood; embolism.

Case XXV.—Nov. 7, 10 A.M. Nose held to the floor; partially blind and deaf; reels in walking. 3 P.M. Unable to get up; lying on side. Brain and meninges congested with small quantity of serum.

Case XXVI.—Nov. 7, P.M. Unable to stand. Died in the night. Brain and membranes congested.

November 28, 154 hogs had died out of 624.

1858, October 25. Another lot of 404, making 1,028 in all, put on sour whisky slop from distillery:

Nov. 9-13. More or less dizzy; reeling in the walk sometimes and less ravenous for food. Four

hogs so injured by fighting that they were slaughtered, leaving 400.

Case LIX.—Died suddenly by: feed trough. Brain gorged with clotted blood, blood-vessels broken.

Case LX.—Nov. 19. Nose held to floor; reeled in walking for thirty-six hours. Partially deaf; blind and paralyzed in hind parts. Brain congested with bloody serum effused.

Case LXIX.—November 24. Paralyzed and unable to stand fourteen hours before death. Brain congested, and cranial cavity contained about one ounce of suffused serum.

Out of the 104 cases of autopsies, 72 had embolism of brain and 16 ruptured blood-vessels in brain.

The author ascribes the paralysis in all cases more or less severe to the absorption of carbonic acid gas with which the stomach and bowels were filled. (Koting, p. 290, paragraph 111, etc.) "The injurious effects of the acetic acid are increased by the gradual absorption of carbonic acid gas, with which the stomach and bowels are constantly filled. This gas slowly paralyzes the muscles, follicles and glands of the whole digestive apparatus, so that these surfaces, villi and follicles cease to have the selective power of health, through which to carry on the various normal physiological processes: deleterious products then effect an entrance together with the nutrition. This state being ushered in, diaphragm, heart, lungs, the whole organism in fact, begin to get more and more enervated. The action of the heart weakens, the extremities are colder, the breathing is more hurried and labored, the nerves of sense are more or less paralyzed; all of which aggravates the effects of the acetic acid by partially paralyzing the entire system and preventing such a rapid elimination of the acetic acid as might otherwise take place."

This is undoubtedly true. Embolism of the brain structures certainly affects the nervous system. It should be added that like cases of hogs were cured by feeding on sweet corn.

With this evidence this paper is closed showing how I have been set right. I can hardly express my delight which comes from the acquisition of this knowledge and the debt owed to the source of information. Doubters can easily verify the statements by living for sixteen days on baked beans alone. So long as there is no rebutting evidence these statements should stand accepted as the exponents of a higher and more practical plane of medical science than has yet been attained. The "capacity it gives to do good not only gives it a title to it but makes the doing of it a duty" (Duke of Brandenburg, 1691).

1730 Broadway, May 1, 1888.

DR. E. VON ERMENGEM has been appointed Professor of Hygiene and Bacteriology at Ghent.

INFANT FEEDING.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY CHAS. WARRINGTON EARLE, M.D.,

PROFESSOR DISEASES OF CHILDREN, WOMAN'S MEDICAL COLLEGE,
PROFESSOR OBSTETRICS, COLLEGE PHYSICIANS AND SURGEONS,
CHICAGO.

As an introduction to what I have to say in regard to infant feeding it will be particularly appropriate to present to you a brief *résumé* of what Baginsky, the latest German author on "Kinderkrankheiten" writes on the subject.

It is appropriate, it appears to me, for several reasons: First, it gives to you the ideas of a leading advanced man on the subject, which is more than would come to you, perhaps, did I not quote from him. It presents to you, secondly, his conclusion in regard to the terrible mortality where a parent deprives her child of maternal nourishment, and also shows how much greater has been the effort with us to furnish a substitute for mothers' milk. Possibly this is to our discredit.

The greatest of mortalities in all times and among all nations is due to the lack of mothers' milk. In Berlin, one-half of all the children born out of wedlock die within six months, and during the summer months a very great number of all children succumb to errors of diet.

The question *par excellence*, rising above all others, is infant diet.

Next to mothers' milk comes the wet nurse.

Artificial foods are divided into two classes:

In the first group are enumerated,

Cows' milk,
Peptogenized milk,
Condensed milk,
Cream mixtures,
Liebig's foods.

While in group two are found the prepared foods.

The first class of artificial foods is substituted from the birth of the infant, while the second is particularly adapted to somewhat older children and may be given as adjuvants to mothers' or nurses' milk.

The difference between mothers' milk and cows' milk is given in general terms as follows: the water is about equal, caseine, albumen, salts and butter, a greater quantity in cows' milk, and of sugar less.

This analysis as regards the fats does not agree with the usual analyses. He also says that coagulation and fermentation arises sooner in cows' milk than in mothers'. According to Dogiel there is not as much difference between mothers' and cows' milk as has been formerly supposed. Out of cows' milk it is possible to manufacture a substitute which in almost every essential is equivalent to mothers' milk. The greatest difficulty is to obtain good cows' milk, and this is why condensed milk is frequently the best substitute which

can be provided. Cows' milk if given to babies should not be administered raw, but boiled long and thoroughly in order to destroy bacteria. Germs of tuberculosis can be effectually destroyed if they exist in cows' milk, by thorough boiling. Soxhlet's cooking apparatus is spoken of as the best and safest to destroy the germs found in milk. By the use of this process cows' milk is much better as a child's food than we have formerly thought. On account of the protean substances, however, the milk should be diluted, and there should also be added a little milk sugar. The digestive powers in children are different. Some bear one thing well and another child something else better. One takes a great amount of fat and thrives, others demand less and if the same amount of fat is given, disease ensues. Cows' milk should usually be prepared in proportion of one to three for young children, later in equal parts. Some children at 9 months can take clear milk and digest it perfectly. A curious fact is developed in the dilution of cows' milk, in that from at first being one to three, this proportion is lessened about 15 per cent. during the first two months, and then increased until equal parts of water and cows' milk are used. Two methods of preserving milk are presented. First it is condensed with sugar, and the second without this ingredient. The great trouble in the condensing process is, that too much sugar makes it indigestible and if you take a milk of this kind and dilute it so that it can be digested it makes it too weak. Every can of condensed milk should be separately inspected.

Peptonizing food is not a new idea. It is very old and great difficulties have been found in bringing about the process, and it is not regarded with great favor by the authority from whom I am now quoting. Biedert's cream mixture contains no more than a single per cent. of caseine, and agrees excellently well in a large number of cases. Liebig's foods and soups are made from milk, wheat and malt, but it is believed that the cream mixture mentioned above, when fresh and properly made, is better than Liebig's food. Nestlé's food is spoken of as being the best type of a prepared food. It contains 40 per cent. of sugar, 5 of fat, 15 of protean compounds, and 30 per cent. of dextrine and amylum. It has been noticed that a long continuation of the administration of an artificial food, in some cases at least, brings about a change of blood. The red corpuscles diminish, but they can be increased if a wet nurse or mothers' milk is substituted.

This much for an introduction, and a statement of what is so greatly desired—a substitute for mothers' milk.

Some one of the old authors, whose name I cannot now give, has said that "Nature does not afford, nor can art supply a substitute for mothers' milk." With this I agree in every respect, and believe further, that as medical men our influence

and encouragement should always be given to mothers, unless some contra-indication exists, to nurse their babies.

We should also explain the dangers which children must pass through, particularly during the summer, and state plainly the probabilities that a certain number of them cannot survive upon any artificial food which may be devised or suggested. Practically, however, we know that in many cases our instructions cannot be carried into effect; that either from sickness, or previous hereditary disease, or from the death of the mother, a considerable number of babies must be, and are deprived of their natural alimentation. In addition to the above cogent reasons, we find a certain number of mothers who are robust and healthy and should nurse their own children, but are constantly finding excuses for not doing it; and either without the physician's consent or for some trivial reason, refuse to nurse their children, and force the issue of an artificial diet.

So firm is my belief that no artificial food can be selected which will furnish a proper nutriment through the hot months to a considerable number of these little people whose mothers cannot or will not nurse them, that I am every year coming to suggest with greater frequency a wet-nurse. I know full well what a wet-nurse in many families means. Many of them are conscientious, and do everything possible to nourish the little charges placed in their care, while others are totally irresponsible and corrupt in the extreme. If from any cause the mother cannot nurse her baby, and from certain other causes a wet-nurse cannot be provided, then, of course, either an entire or partial artificial diet must be provided. A *mixed* diet is preferable to an artificial one, that is, part mothers' or nurses' milk, with the remainder supplied from some outside source. A little mothers' milk for a sick day or while a tooth is erupting is most valuable.

At the first, then, we must acknowledge three facts.

1st. That mothers' milk is the food *par excellence* for a baby.

2d. If this cannot be furnished, in large cities at least, a wet-nurse should be procured.

3. If, for causes which I have now enumerated, the mother cannot supply the nourishment, and if from causes over which we have no control, a wet-nurse cannot be secured, an artificial diet must be furnished. And that if the mother or a wet-nurse can provide only part enough nourishment for the child, it is better to fill in with some of the substitutes, such as cream, cows' milk, or some of the prepared foods, than to try to bring up the child upon a strictly artificial food.

One of the first occasions at which we may be called to supply an artificial food for a baby comes in a case where a child is prematurely born. In part of these cases the milk secretion of the mother

is at once established and the child is nourished from the very commencement with the food which its little non-developed digestive apparatus can best provide for; in others several weeks may elapse before the milk secretion is established, and during that time something must be provided for its nourishment. Several have already come under my care. I have notes at this moment of three infants born between the six and seventh months, where an artificial food from necessity, had to be provided. I have succeeded in saving these lives on an artificial food. Cream is the basis, barley-water the menstruum, to which is added a little salt, a little sugar of milk, and a small amount of lime-water.

A prematurely born baby should be fed a small quantity frequently. Sometimes not more than a half-teaspoonful, and when not fed from the spoon let an ordinary ounce bottle be provided with a rubber mouth-piece. I have no use for the large nursing bottle provided with glass and rubber tubings and brushes. I regard them, with all their appliances, particularly for a prematurely born child, a fraud and a snare. For the first few days, perhaps, cracker-water with a small amount of sugar of milk is all that is necessary. Then cream added to a little cracker-water, or cream and rice-water; then cream and barley-water, and if vomiting takes place, a small amount of lime-water should be added. If from any reason the cream does not agree with the baby, condensed milk with barley-water, a little salt, and possibly the addition of a little lime-water. By varying the amount of cream, using either barley-water or rice-water as the diluent, adding a little sugar of milk and a little grain of salt, and sometimes a little condensed milk, when from any cause the cream disagrees with the infant, one is able to carry along one of these puny children until such time as the milk secretion is established. At another place in this paper I shall have something more to say in regard to condensed milk.

OBJECTIONS TO CREAM FOODS.

In our large cities it is difficult to obtain pure cream, and it is more liable to changes than ordinary cows' milk. It is also possible that enough cream to nourish a child would be too fat for it to digest. As a matter of fact, however, we find cream does agree excellently well with a large number of children.

ARTIFICIAL FOODS.

Coming to consider the use of artificial foods, we should state in unmistakable terms to mothers that because one baby has been brought up on a given artificial food, it does not follow that the same food will agree with the next baby. One food nourishes a given baby well, but may, if administered persistently, kill the next baby.

The peculiarities, good and bad, of the different foods which I shall consider will be purely

from a clinical standpoint. The discussions regarding the chemical compositions and arrangements must come from the chemists themselves.

My trouble has been to find a food that would in the first place, agree with a baby, and secondly, that would nourish it.

Cows' milk will agree with some babies, but in many cases its administration is followed by vomiting and passing great masses of curds (caseine). Manufactured foods are frequently retained by the child, but he emaciates and many die from inanition.

Very early in my experience I began to detect a difference in foods. Some agreed with a young baby and would not nourish an older child; while other foods disagreed with a young infant, and furnished abundant nutriment to a child 10 or 12 months of age. Without investigating in a scientific manner the composition of these foods, I came to calling them young foods and old foods. Among the foods which I have found suitable for very young children, I would mention cream and barley first, cream and oatmeal water or rice water, condensed milk, with some restrictions, Nestlé's and Carnrick's foods and Malted Milk. I should not fail to speak of the white of egg as a substance very easily digested by children with weak stomachs, and which gives to them a very fair degree of nourishment. Then comes Mellin's food, Imperial Granum, and Ridges' food for older children. I speak of these foods after considerable study and rather extended experience with them, and do not place any as first, or in any degree a perfect food.

Let us examine the constituents of these foods, and point out their imperfections. It will be noticed that simply from experience I had at first selected a food with more fat—that is, cream and barley-water. Next came milk and Malted foods, and then for older children the farinaceous and Liebig's foods, Mellin's, Ridge's and Imperial Granum. It appears to me that there is good in all these foods, but the medical profession do not take sufficient pains to designate a food suitable for a young or older child. The matter is left too largely to the people, until a food of their selection has produced its deleterious effects, and then we are called, only to find a child emaciated, impoverished and with a digestive apparatus so thoroughly out of repair that the child dies before we can bring about a normal condition of digestion.

We must cease believing and acting on the belief that, because a baby is a little man that he needs the same food (as regards quality, and only less in quantity) that a man needs. And the dear people who are so quick to decide some of these questions which trouble us for years, should have alongside the motto "God Bless our Home," another—"Don't Starve the Baby."

COWS' MILK.

This is a perfect food for the adult. It has fat,

albumen, carbo-hydrates, and salts, and the adult stomach generally digests it with ease, and it is capable of sustaining life for a long period.

It forms, however, very heavy, and dense curds, and in this respect is frequently extremely difficult to digest in a weak and undeveloped stomach.

It is also poor in fat, and with the objection urged above, namely: the tendency to form a hard, firm curd, in many cases comes to be, when used as a baby food, the exciting cause of many diseases, and remotely the food upon which emaciation, marasmus, and death ensue.

I do not know that our brethren in the country and small towns find these difficulties with the administration of cow's milk, but we do in the large cities. I do not deny that some children thrive on cow's milk; I grant this, but at the same time I do know that it kills others.

The milk from blooded cows supposed to be richer in fat has been tried, and in many cases works well, but in others has been a marked failure.

There is no reason why, however, when we know what the food the cow is fed upon, that she is in a clean stable, and care is taken with the milk and it agrees with the baby, that it should not be selected.

The index of good nutrition, whether the baby is on mother's milk, mixed food or artificial, is in its growth. To this end the child should be frequently weighed, and we should inspect its appearance, look at its fontanelles, etc.

THE SO-CALLED MILK FOODS.

The best examples of so-called milk foods are Gerber's and Nestlé's. The first I have had very little experience with, but know that it has agreed excellently well with a few children.

Nestlé's food is made very much like it, and is with us a very popular food. Some Chicago druggists say that more Nestlé's food is sold than any other infant food on the market.

Condensed milk forms the basis of Nestlé's food. To this is added a certain amount of wheat flour and as stated by some, oatmeal. This substance is then made into biscuits, thoroughly cooked, ground minutely and mixed with the condensed milk. This is then dried by slow heat, ground, and sufficient wheat gluten is added to bring up the albuminoids to the same per cent. found in human milk. (Leeds.)

Whether this is the exact method of making this food we do not know, but we do know that all of these milk foods have a good per cent. of albuminoids, fats and salts, and that by baking, some of the starchy parts are converted into dextrine and are easily assimilated.

OBJECTIONS TO NESTLÉ'S FOOD.

It is claimed that a large part of the starch is not converted, and in none of these foods has the caseine of the milk been pre-digested, and the

character of the caseine is not at all changed. Notwithstanding this fact, we know that at the bedside Nestlé's food agrees with a very large number of children.

CONDENSED MILK.

I may remark in the beginning that the great trouble in the use of condensed milk is, that not enough is used. Every one should understand that milk is only condensed four times, and that a small amount will color a very large amount of water. The people do not understand this, and I am afraid that physicians do not take the trouble in many cases to investigate it. One teaspoonful of condensed milk will color twelve ounces of water, and I have known this to be given as a food to an infant. It is a starvation diet, and in the majority of cases sooner or later the child develops symptoms of bad nutrition.

In my experience the youngest infant will take condensed milk in the proportion of 1 to 10 or 15, that is, barley or rice water, 10 to 15 pts., condensed milk, 1 part, sugar of milk, salt and the phosphates. Even this will only be sufficient for a short time, and one must soon either add more condensed milk, or to the same food, cream. The agreement with each individual case, in less or increasing quantities, is the only safe rule for our guidance.

Objections have been made to condensed milk, and in all probability some of them are valid. We have already remarked that this food does not in all cases agree with infants.

It has been claimed that the character of the caseine is unchanged. It is possible that the diluent, barley or rice water, may correct this to some extent. Certain it is that condensed milk with the above diluent agrees well with some children.

It has also been claimed that the large amount of cane sugar or glucose used in the preparation of condensed milk, make it more susceptible to fermentation. I am not aware that this objection has been removed, unless it is in a condensed milk made without sugar.

After the milk foods, come, it appears to me, the so-called Liebig's preparations. Some of these are used with cows' milk, and by this addition it is claimed that we obtain very nearly a preparation corresponding physiologically with mother's milk.

It is claimed for Mellin's food:

That it is a soluble dry extract from wheat and malt.

That it is perfectly free from starch and cane sugar; the starch being converted into dextrine and grape sugar.

That it is entirely free from husks, indigestible inert matter and animal germs.

That it contains a large amount of proteids (albuminoids) and soluble phosphates and that it is alkaline in reaction.

It is not claimed that this food has sufficient fat to nourish a child and to supply this, cream may be added. It is claimed, however, that by its addition the albuminoids are so changed that small flakey curds are formed in place of hard, dense ones.

This food certainly has stood the test, and at the bedside has been found of great value in the practice of those who are studying this subject and whose opinions are worthy of respect.

OBJECTIONS TO LIEBIG'S FOOD.

These are composed largely of barley, malt and wheat flour, and starch, which has been converted into *maltose*. These foods will not nourish a child sufficient without the addition of cow's milk, and as their constituents (Mellin's and Horlick's food) are nearly the same in nutritious value as cow's milk, it is urged that they do not add anything to cow's milk, except sugar and an alkali. It is claimed that the addition of the maltose does not prevent the formation of hard coagula from the caseine of cow's milk. From experiments which I have recently made—and my thanks are due to Prof. Salisbury of the Woman's Medical College, for assistance—it seems that the claim which is made by the advocates of the Mellin food is true, and that the addition of this food to cow's milk does cause it to break up in very small flakey curds. The fact that these foods contain a considerable amount of maltose, and are sometimes laxative to babies, possibly is true, but this may be said of most any other food.

MALTED MILK.

This is a new food, but from personal observation I can testify to the fact that it is of value in some cases. It has agreed with several very young children when other foods would not. The principle involved is that the diastatic action of malt is most closely allied to the active principle of saliva—the pancreatic and intestinal juices. It is made as follows: "In malted milk we present pure fresh cow's milk, combined with the extract of selected wheat and malted barley in a dry-powdered form, perfectly soluble in water, requiring no cooking, or the addition of milk, and free from starch. Situated as we are, in the midst of one of the best dairy districts, our milk is obtained from cows under our own supervision, and is evaporated before any change is possible. In addition to this, we select all our own grain, malt all our own barley by special process, by which we obtain the greatest diastatic action from the malt; we also do all our own grinding. Consequently we can guarantee all the ingredients, pure, fresh and unadulterated."

This food requires no cooking, neither the addition of milk, and is said to contain no starch.

OBJECTIONS TO MALTED MILK.

This comes from the fact that it contains a

large amount of maltose, and is liable to abnormal fermentation, the same as we find in Liebig's food.

PEPTOGENIC MILK POWDER.

This is claimed to be the safest and best physiological imitation of mother's milk, and is composed of milk sugar—the mineral matters and pancreatin. It is a substance to be added to cow's milk in order to make it possible for a child to digest the milk.

OBJECTIONS TO PEPTOGENIC MILK POWDER OR HUMANIZED MILK.

Theoretically, this milk should be very nearly the correct food; but, practically, we find that it disagrees with a considerable number of babies. The greatest objections are that it is not practicable in the household, because it requires scientific skill to properly pre-digest the food, and that many irregularities of digestion will certainly come about from this preparation. Recent writers have claimed that pancreatin is extremely liable to putrefactive changes, and that if it is used, it must be fresh and sterilized by heat. Foster says that "pancreatin, unless absolutely pure, swarms with bacteria." The theory of this food is good; practically it does not come up to the standard. It has been suggested that if this food is not rich enough to nourish a baby, cream may be added at each feeding.

CARNRICK'S FOOD.

I have carefully examined the process of the manufacturing of this food and believe that the greatest care is exercised in gathering the milk and the attempt is made to insure absolute purity. The dairies from which this milk comes are under strict regulations, and as soon as the milk is received it is drawn into digesting tanks and brought to a temperature of 115 to 120° and treated with freshly made extract of pig's pancreas. It is afterwards raised to a temperature of 210° to entirely destroy any pancreatic ferments; evaporated to the consistency of condensed milk, combined with dextrine and milk sugar; then evaporation continued and powdered and bolted.

This food is composed of 45 per cent of powdered milk, 45 per cent of dextrine and 10 per cent of milk sugar. It is partly pre-digested, so that the caseine is as readily digested by an infant as it is in human milk. Dextrine is used in place of maltose for the following reasons: Dextrine is not fermentable until changed into sugar. The youngest infant can supply sufficient ferment to digest dextrine, and when the process of digestion is under way, abnormal fermentation is not liable to occur. The milk is only partly pre-digested, because it is not advisable to entirely digest any food before ingestion. It has been claimed by Prof. Vaughn that preserved dry milk, if properly done, will keep for any length of time; and it is

claimed that of the many hundred thousand cans of this food, which have been placed upon the market during the past three years, not more than a dozen of them have been returned in bad order. Finally, it is claimed of Carnrick's food that it is the only artificial food which will thoroughly nourish a child without the addition of cow's milk; that it approaches nearer human milk in composition and digestibility than any other artificial food, up to this time, that has been placed upon the market. It is also claimed that it will agree with a larger number of children than any other artificial food.

Personally, the food has agreed with children in my practice, and has certainly "bridged over" some who have not been able to take any other food. In my experience it is hardly rich enough, however, and fat in the shape of cream must be added.

GRANUM AND RIDGE'S FOODS.

It has been generally conceded that starch can not be digested by young infants from the fact that their digestive fluids are lacking in certain constituents. Upon this basis certain foods which are known to contain starch have been objected to. Theoretically, it is probably true that babies—at least a large number of them—cannot digest starch, yet, practically, we know that some babies do take care of this kind of food excellently well. According to rule a baby or young child should not eat potatoes; this kind of food should disagree with them. As a matter of fact, we do know, however, that some children thrive excellently well upon this kind of food.

Imperial Granum and Ridge's food have been placed in this class, or as Farinaceous foods. They have been tried and tested for a long period and it must be confessed that for older children they do well in many cases. Time will not permit me to enter into the details of manufacture. They are made largely from the best of flour, made very fine, and thoroughly cooked by which a large part of the starch is changed into dextrine.

In the Foundlings' Home in Chicago, for very young and undeveloped babies cream foods take the preference; then comes Nestlé's food, and afterwards for older children, Granum. Ridge's food is a favorite; but the peptogenic milk foods have fallen below the standard.

Probably one of the most important questions which should engage our attention is the

FERMENTATION OF MILK.

Fermentation of milk occurs only in consequence of the introduction into it of micro-organisms. If the milk be received by a sterilized tube into a sterilized receptacle directly from the udder of the cow, it will not ferment nor become acid, though kept indefinitely. But except these precautions are taken, the germs always gain access to it, consequently in order to prevent it

fermentation, it is necessary to heat it. It can be sterilized by heating to 70 degrees for an hour by which process the adult bacilli are killed, but in order to kill the spores it is necessary to repeat the process for an hour each day for four or five days. Heating to 100 degrees by a current of steam for one hour will sterilize it completely, but boiling coagulates the albumen and to some extent changes the milk sugar. The first process in the fermentation of milk is due to the action of a bacillus, and consists in the conversion of the milk sugar into lactic acid. This process ceases after a small quantity of acid is formed, but if the acid be neutralized by chalk, the fermentation will go on until the milk sugar is all decomposed. By the change of reaction of the milk the caseine is coagulated. This coagulation is said to be due to the action of the acid and not directly to that of the bacillus. When the milk sugar is converted into lactic acid, another bacillus—*bacillus subtilis*—attacks the lactic acid and converts it into butyric acid with evolution of carbon dioxide and free hydrogen. This bacillus cannot act on milk sugar unless it is first converted into lactic acid.

Under exceptional circumstances there is formed in milk a substance first discovered by Prof. Vaughn, of Ann Arbor, and named by him "tyrotoxin" (cheese poison). This substance is a crystalline nitrogenous substance, and is supposed to be a ptomaine. When taken it produces pain at the base of the brain, vomiting or retching and purging. When given to an animal similar symptoms are produced. Prof. Vaughn believes this to be the cause of cholera infantum. Tyrotoxin is formed spontaneously in milk after some months; and it will be produced very quickly if some milk in which it has been formed be added to fresh milk. Its formation seems to be connected with the butyric acid fermentation.

In conclusion I have to repeat my quotation made at the opening: "Nature does not afford, nor can art supply a substitute for mother's milk."

1. Mothers should be encouraged by every argument possible to nurse their children, and the dangers of too early weaning for trivial causes should be demonstrated to them.

2. If from causes which we can not control and which seem rational and valid, a mother can not nurse her child then, in cities at least, a wet-nurse should be procured.

3. A mixed diet is preferable to an artificial one.

4. For very young infants in lieu of mother's or nurse's milk, cream with barley, rice or oatmeal water, to which milk sugar and either common salt, phosphate of lime or lime water in small quantities, is added, seem to agree best.

5. For older children cows' milk and the so-called milk foods, and it would seem from some recent analyses of cows' milk, that if all kinds of fermentation can be prevented that the task of prepar-

ing cows' milk so that it will agree with infants, will not be as difficult as it has formerly been. It also seems that it is along this line that investigation should in future be made. We must not only insist that good milk shall be provided, but also that it shall not have in it bacteria. If milk is used let it be thoroughly boiled, and for a long time; if it is diluted with water, let it be absolutely pure; if the attempt is made to make it more nutritious by the addition of cream, let it be that which has not already undergone partial decomposition. The sugar added should be pure milk sugar, and if a small amount of wheat or flour is used, this too should be thoroughly cooked.

6. If artificial foods are used, let the clinical test decide which shall be selected, and when one food is found to agree with a child, let the growth and increasing nutrition of that child, or its loss in weight and commencing atrophy, be the guide for the substitution of some other food. I cannot designate particular foods for reasons perfectly obvious. Every food has its advocates; every food has its chemical analysis which prove, without any shadow of doubt, that it is chemically and physiologically the only substitute for mother's milk, and yet every one of them, sometimes fail us, I will admit that this is true of mother's milk in rare cases. But, as a rule, let our advice be in the order I here name—mother's milk, pure milk, cream foods, milk foods, malted foods, farinaceous foods; always pure, free from bacteria and each preparation, whatever it be, frequently inspected.

CEREBRO-SPINAL MENINGITIS.

RECOGNIZING INCIPIENT CONGESTION AS BASIS OF TREATMENT.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. MCFADDEN GASTON, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY, SOUTHERN MEDICAL COLLEGE, ATLANTA, GA.

The disorder known as cerebro-spinal meningitis presents various phases in different cases. If all the symptoms observed in the many forms or this affection were collected, they would afford a most extraordinary nosological group. Phenomena that ordinarily accompany other diseases are often associated with this Protean malady; and yet there is no single development of its characteristics which is essential to its recognition. Even the opisthotonos, which may be regarded as pathognomonic when present, is sometimes absent in cases in which the progress of other developments leaves no doubt about the true diagnosis.

The multifarious elements that enter into the history of this disease are well calculated to deceive the practitioner in an isolated case, but it

most frequently occurs in an epidemic form or in groups, so as to throw light upon the diagnosis in cases not presenting distinctive features. It also undergoes very striking modifications in its different stages of development in the same individual. The primary congestive feature is variable in its degree and duration, inducing general vital depression to a greater or less extent, followed by reaction with febrile indications. This leads to, or is accompanied by, inflammation in the coats of the brain and spinal cord, and the consequent effusion of serum or the production of pus. The accumulation of these fluids in the arachnoid cavity and in the ventricles of the brain, induces frequently impairment of vision, especially, according to my own observation, in the left eye, and deafness with subsequent indications of paralysis, either paraplegia or hemiplegia. I have had occasion to note recently the occurrence of complete loss of motion and sensibility in the arm and leg on the right side, after the left eye had become affected, in a case which was diagnosed previously as cerebro-spinal meningitis, and which terminated fatally in a few hours afterwards.

The appearance of ecchymosed spots, especially on the legs, would indicate a breaking down of the blood crisis as the disease progresses; and yet the observations made upon the blood in the early stage show an increase of fibrin, and there is a buffy coat upon the surface, with coagulation of the blood, when discharged into a vessel by venesection as in former days.

In the progress of this disorder, pains in the extremities, with swelling of the joints, sometimes become troublesome attendants; and by some peripheral association with the great nerve centres it is found, that a certain transition occurs, leading to collapse.

This general and superficial outline of the developments, gives only a very meagre presentation of the various phenomena observed in cases of cerebro-spinal meningitis. I refer to these data, from my professional experience, to impress upon my colleagues the gravity of the progressive stage of this disorder, and the great importance of an early recognition of the true character of the case, with an immediate application of measures calculated to arrest its tendency to a fatal result.

The fundamental element in serious cases, at the outset, is evidently an overpowering impression upon the nerve centres; and those who have watched closely the concomitants of the early stage must have remarked a striking correspondence between the main features of this disease and those found in pernicious fevers or in those cases known as congestive chills. The heat of head, coolness of extremities, heavy respiration, and general discomfort, are common to them.

The participation of the ganglionic system with the cerebro-spinal system of nerves is shown, by

the marked vital depression; and there is evidently a lack of nerve power to maintain the normal performance of the various functions of the body, inducing congestion of all the internal organs. It has been demonstrated, by experiments on the inferior animals, that the division of nerves which supply a part and the deprivation of the nerve force, leads to congestion of the vascular structure; so that we are prepared to comprehend how enervation becomes the precursor and concomitant, if not the direct cause of congestion.

While we know very little of the real nature of the atmospheric or climatic influence which operates at certain seasons in particular localities, as the remote cause of cerebro-spinal meningitis, there is something in the sudden changes of the weather, which strongly predisposes the organism to vital depression, and hence to congestion of the viscera. As a consequence of this engorgement, there is doubtless an atonic state of all the internal organs, which becomes manifest earlier or later by marked prostration, and eventually leads to collapse, which is rarely, if ever, relieved by any kind of treatment, so as to arrest a fatal result.

If a patient passes through this congestive stage of the disease, the reaction is attended with inflammatory developments, and the membranes of the brain and cord are involved, so as to warrant the designation of cerebro-spinal meningitis; prior to this, however, the injurious impression of the congestion and vascular engorgement may have reached a point which does not admit of a high grade of inflammation of an acute character, but the symptoms indicate an atonic condition, with a low form of fever and subacute inflammation of the cerebro-spinal membranes. It is one of the most difficult problems in clinical experience to diagnose one of these cases in its commencement, as there is really no feature of a distinctive character prior to the inflammatory development; and yet, for all practical purposes the occasion has passed for effective treatment in grave cases when the inflammatory process has been established.

My object in preparing this paper has been to emphasize the great importance of recognizing the gravity of the situation at an early period, by the general symptoms indicative of congestion, and not wait for indications of inflammation to determine upon the nature of the disease.

If there is an epidemic prevalence of cerebro-spinal meningitis, or if other patients have been attacked with it in the same neighborhood, then it becomes a comparatively easy matter to diagnose a case in the formative period; but when the disease occurs sporadically, as it sometimes does, it behooves the practitioner to proceed upon general principles, in recognizing the prodromata of the disease as corresponding in all their essentials to the accompaniments of the grave class of

pernicious fevers; and in noting closely the evidences of congestion, as the typical forerunner of the inflammatory stages of the disease.

If a doubt exists in regard to the ultimate manifestation of the characteristics of cerebro-spinal meningitis, there are still presented phenomena which indicate a recourse to a mode of treatment which is calculated to arrest the development of the disease; and it is to this factor in the case that I have to direct the special attention of the profession. The practicability of controlling a case in which congestion of vital organs is well declared, but without affording the data for a differential diagnosis in favor of cerebro-spinal meningitis, has been verified by me in several instances; and I would much prefer to give my patient the benefit of the doubt, to risking the serious consequences of delay for the purpose of making an assured judgment as to the true solution of the prospective pathological issue. Outside of my own practice I have had an opportunity of observing quite a number of cases of this disease in consultation with different colleagues in this city within the past four years, and they corroborate my statements as to the evidences of vital prostration in the early history of the grave type of cerebro-spinal meningitis. Among the patients thus seen, I may note some cases of special interest which occurred in the Fulton county jail, in the persons of United States prisoners, under the charge of Dr. C. A. Stiles, who has kindly furnished me with the following record:

There were forty-five cases of meningitis of varying intensity—thirty-five of which were cerebro-spinal, and the balance were spinal meningitis—during the spring months of 1885 and '86, treated with the following results:

About 80 per cent. of the latter died and 40 per cent. of the former. The small percentage of fatal results in the former was due to the fact that about one-third of the cases were of a mild type. The onset of this disease was invariably sudden, manifested by chilliness, nausea, vomiting, intense pain in the head, neck, back and lower extremities. Then appeared tetanic spasms or rigidity of muscles of the neck, back and limbs, which sometimes resulted in the neck and back being drawn posteriorly in the form of a bow; the hands and feet being contracted into very unusual positions. There were in some cases painful swellings of the joints of the upper and lower extremities, resembling inflammatory rheumatism. The entire body was sometimes so sensitive, that even the weight of the bed-clothes caused pain. There frequently occurred deafness, impairment of vision and congestion of conjunctiva, with double vision and pupils alternately contracted and dilated or one pupil dilated with the other much contracted. The eye-balls were frequently immovable with a fixed stare. The pulse was sometimes variable,

being at one hour slow and at another accelerated, but diminished in volume and strength, so that at times it was imperceptible. The respiration was slower than natural in most cases. The skin at the outset was almost always abnormally cool, and the temperature below the normal standard. In the majority of cases constipation of the bowels was present; but in others diarrhoea alternated with the constipation. There was often atony of the bladder requiring the catheter to draw off the urine; which was scanty and high colored. When a patient survived the inflammatory condition it gave way to a typhoid character with redness of the tongue, pain in the epigastrium, sometimes extending over the entire abdomen, and vomiting a greenish fluid. On different parts of the body were noted purplish or dark spots, due to subcutaneous extravasation of the blood, connected with the adynamic state of the capillaries. A mild case of this disease frequently runs its course under the use of palliative measures without risk to life. But when the antecedents of such gravity as usually usher in a case of pernicious fever, herald the approach of this disease, we may reasonably presume upon a fatal result if the progressive congestion is not arrested before the development of inflammation, and nothing short of a radical relief of the overpowered nerve centres can avail.

In studying the means of treatment that are generally recommended by writers on epidemic cerebro-spinal meningitis I have been strongly impressed with their inefficiency to arrest the depressing and ultimate disintegrating progress of the disorder, and while the recourse to opiates has, in some cases, seemed to afford relief, it is evident that in most cases it only soothes the passage to the grave.

Instead of clogging the secretions and benumbing the sensibilities by anodynes, there is an urgent demand for restoring the functions of the vital organs and arousing the nerve centres to action, by revulsive applications externally and revolutionary measures internally, which shall bring about a change in the vital forces as promptly as possible. This mode of proceeding, which has been adopted with favorable results in some cases which presented features of gravity, is commended to the unbiassed judgment of those who may have to manage that form of cerebro-spinal meningitis which proves intractable by other means.

Relying upon the special properties of a mixture of calomel and quinine, from having observed the effects of this combination in pernicious or congestive fevers, I have employed this treatment with the happiest effect for the purpose of jugulating the progressive development of the congestive stage of this disease. Sulphate of quinine in doses of 15 grs. with 5 grs. of calomel, in pills or capsules, may be given every two hours until four doses are taken. It will be found that the indi-

cations of local determination to the head may be effectually combatted by placing the lower extremities in a hot mustard bath, while cold is applied to the head. In the meantime a mustard plaster along the spine assists in restoring energy to the nervous system, while similar applications are made to the inner portions of the arms and legs. If the stomach should be irritable 10 grains of bicarbonate of soda with $\frac{1}{8}$ of a grain of sulphate of morphine may be given at intervals for its correction.

For the purpose of illustrating the course pursued in cases which are not arrested by this heroic treatment at the outset, I may give an outline of the report of a case which was published in the May number of the *Southern Medical Record* for 1885.

On the 19th of April I was called to a white boy, $3\frac{1}{2}$ years old, who had been sick for two days previously. There was great heat of the head, with flushed face and dilatation of the pupils, with a mottled appearance of the skin over the body. The pulse was one hundred beats to the minute with marked tension. There was writhing of the body with tossing of his arms and legs, accompanied by a fixed stare of the eyes, and want of mental perception, with repeated sharp outcries at short intervals. The little patient was placed in a tub of warm water with a blanket wrapped around the shoulders and over the tub, so as to keep in the warm vapor. A handful of powdered mustard was mixed with the water. Cold water was applied to the head during the half hour that he remained in the bath. In the meantime he was given the following internal remedy: Sulphate of quinine, 12 grs.; calomel, 4 grs., divided into 4 powders, one every two hours. It was only by prizing his mouth open with a large spoon that the medicine could be poured into his throat. A mustard plaster was applied along the spine.

April 19th.—The combination of calomel and quinine had produced two evacuations from the bowels, the heat of the head was less with some return of consciousness, and the pulse was 90 to the minute with pupils still dilated. There were discolored spots about the knees, and a well defined retraction of the head, with the tongue considerably coated, and decided thirst.

The quinine and calomel were repeated as on the previous day, with directions to follow this prescription by another, consisting of salicylate of soda, 1 drachm, fluid extract of jaborandi, and syrup of orange peel, each 1 ounce, a half teaspoonful with a tablespoonful of water to be taken every two hours.

April 20th.—The symptoms had undergone quite a change, and there was no longer undue determination to the head, while the pulse was 110 to the minute without that tension previously observed. The bowels had been moved again

after taking the calomel and quinine, while the warmth of the general surface was above normal.

April 21st.—The moderate reaction of yesterday had given way to a partial collapse, and the little patient lay in a semi-comatose condition with his mouth partially open, and upon raising the eyelids which were closed, the pupils were found contracted. He was ordered whisky-toddy, and upon being raised to drink it, a striking and extraordinary dilatation of the pupils occurred, manifesting disordered nerve centres. The warmth of the surface was below normal even upon his face and ears. The pulse was 130 to the minute and without tension. The opisthotonos had diminished, and the ecchymosed spots had almost faded away. The urine was passed involuntarily.

He was ordered a tablespoonful, every two hours, of a solution of carbonate of ammonia, having 20 grains to the ounce, and a tablespoonful of good whisky with milk in the intervals, with plasters of mustard to his extremities.

April 22d.—The tendency to collapse had ceased, his mental state was better, and he took his medicine with the milk punch in the intervals without further trouble. The pulse was 120 beats to the minute with better tone, the natural temperature had been restored, while the tongue was clean and moist. The bowels had been moved and urine passed in bed with tympanitic distension of the bowels. A poultice of flaxseed with Peruvian bark was applied to the abdomen.

April 23d.—The patient had improved in all respects with a pulse of 125 to the minute. He was given a teaspoonful of Colden's Liquid Beef Tonic every four hours, continuing the carbonate of ammonia and the milk punch in the intervals. The poultice was removed and a flannel roller with camphorated spirits of turpentine was applied to the bowels.

April 25th.—Not having visited the patient yesterday, it was found to-day that his bowels had too frequently moved with mucous discharges and considerable tympanitis. The pulse was 120 to the minute, and the tongue clean but redder and dryer than natural.

The following was given:

| | |
|----------------------------------|-----|
| Spirits of turpentine | (5) |
| Carbonate of ammonia | (5) |
| Elixir of paregoric | (5) |
| Camphor water | |
| Mucilage of acacia, aa | (5) |

Mix, and take a teaspoonful every two hours. Stop beef extract, and take boiled milk with whisky after each dose of the medicine. Continue spirits of turpentine with camphor to the bowels.

April 26th.—Frequent discharges of mucus with tympanitis, pulse 140 to minute, tongue red and smooth but not dry. Consciousness has been turned. In addition to medication of yesterday he takes the following:

| | |
|-------------------------------|---------|
| Sulphate of quinine | gr. xij |
| Acetate of lead | gr. vj |
| Tannin | gr. iv |
| Opium | gr. ij |

Mix and divide in 12 powders.

Take one at intervals of two, three or four hours according to the frequency of discharges from the bowels. Apply red-oak bark poultice to abdomen after rubbing the surface with camphorated spirits of turpentine.

April 27th.—The irritation of bowels ceased after second astringent powder, when they were suspended. The poultice was discontinued, using a flannel roller with camphorated spirits of turpentine upon the abdomen. The tympanitis has disappeared; tongue not slick and red as before, pulse 125 to the minute, and passed the night quietly. Still some stiffness of neck. The terebinthinate mixture was alternated with one grain of quinine every two hours, taking milk punch after each.

April 28th.—Passed a restless night, and shows nervous agitation to-day. Bowels only moved twice in thirty-six hours, the tongue moist with slight coating, pulse 125 to the minute. Gave 5 grains of chloral hydrate, to be repeated hourly for three times, and if not quiet within two hours afterwards, to give $\frac{1}{4}$ grain of morphine. Continue terebinthinate mixture and quinine with milk punch.

Notwithstanding that the neck is still stiff there is no deafness nor impairment of vision and the intellectual faculties are not affected.

April 29th and 30th were passed in a state of great nervous agitation, notwithstanding the free use of chloral and morphine, so that other agents seemed to be required for calming him.

May 1st.—Observing an ash-colored faecal evacuation I inferred that a stimulus to the biliary function was called for, and gave 3 grains of saccharated calomel, with instructions to repeat it every four hours, until the passages should be colored with bile. Within two hours an evacuation indicated a change in the color, and with the correction of the hepatic secretion it was expected that the nervous trouble would be relieved. The pulse was 125, temperature 100° Fahrenheit, tongue clean, no tympanitis, slight stiffness of neck, the pupils were normal and responded to varying degrees of light.

May 26th.—The closing record of this case notes that there has been no indication, recently, of any febrile excitement; but at times considerable nervous irritability and fretfulness, without any mental disturbance. He is still feeble, but without any consequences of the disease in contraction of muscles or defect of sight or hearing. His nourishment consists of milk punch, soft boiled eggs, etc. This result manifests the impairment of all the vital forces from this disease, even when the most energetic measures are resorted to

at the outset to correct the disturbance of the nerve centres and the derangement of the biliary secretion.

It is evident that the symptoms, indicative of cerebro-spinal meningitis trouble, were controlled by the use of the calomel and quinine, followed by the salicylate of soda and fluid extract of jaborandi; and none of the usual results of the most aggravated cases, such as deafness or loss of sight connected with cerebral effusion, ensued in this case after the expiration of thirty-nine days' sickness, not including convalescence.

The details of this typical case, with many serious developments combatted by special measures, are presented in preference to giving the treatment of other patients, with a view to demonstrate clearly my practice in cerebro-spinal meningitis.

NOTE.—In the person of a vigorous man, about 30 years of age, on June 24, there occurred excruciating pains of the head, with contraction of the muscles at the back of the neck, and vital depression. At 9:30 P.M. he took 10 grains of antipyrin and repeated the same within an hour. He was directed to await the visit of my colleague, Dr. P. E. Murray, at midnight, to determine upon the propriety of a third dose. Upon his arrival the cervical muscles were found relaxed and the pain in the head much relieved, so that he withheld the antipyrin for the night. On visiting the patient next morning, I gave him the remaining 10 grains with complete relief of all the symptoms.

On the afternoon of June 25 he took 5 grains of calomel with 10 grains of bicarb. soda, three times, with intervals of two hours, followed next morning by citrate of magnesia, which had a purgative effect.

June 26 and 27, sulph. quinia was taken in doses of 10 grains and the patient is convalescent.

Was this a case of cerebro-spinal meningitis, jugulated by the antipyrin?

A CASE OF CHRONIC INTERNAL HYDROCEPHALUS.

Read before the Medical Society of the District of Columbia, February 22, 1888.

BY I. W. BLACKBURN, M.D.,

PATHOLOGIST TO GOVERNMENT HOSPITAL FOR THE INSANE,
WASHINGTON, D. C.

The history of the patient, obtained from his mother is as follows: He was at birth smaller than her other children, and no disproportion of the head was noticed at that time. The delivery was accomplished by a midwife, who used strong traction without the assistance of the natural powers, and it is to this violence that the mother attributes the misfortune of her child.

Enlargement of the head was not noticed until the child was three or four months old, when the mother observed a prominence at the posterior

fontanelles. The head rapidly increased in size until at the age of two years it was as large as at his death. The fontanelles remained open until he was seven years of age.

No attempt to walk was made until he was about 9 years old, when he made some efforts at locomotion, but was soon confined to his chair; later in life he used a rolling chair.

In early childhood his spine was straight, but it soon became extremely curved.

His general health was good, due to the extreme care of his mother, but he suffered much from headache, chronic constipation, and some form of urinary disease causing retention of urine at times. He never had convulsions, and though his movements were imperfect he had no distinct paralysis, and no disturbance of the special senses was observed until toward the end of his life.



C. F. Hydrocephalus.

The mental power was, of course, limited, but he had remarkably retentive memory, and though he could not read, having never been taught, he could remember and fairly understand what was read to him.

He was fond of singing and whistling, and could remember both, words and tunes after hearing them a few times.

His moral sense was well developed, and though he was mischievous he was harmless, and he of-

ten expressed his gratitude that he was a cripple rather than a drunkard.

A sense of humor was not altogether absent; he had some appreciation of a joke, and one of his greatest amusements was to look at comic pictures.

His articulation was imperfect, but he could be easily understood by those acquainted with him.

On admission to the hospital he seemed to be much prostrated, physically and mentally; he talked but little, and he was unable to sit erect without assistance.

His age at the time of his admission was 38 years; height, 4 feet 5 inches. The head was greatly enlarged, globular, and slightly flattened at the top, forehead prominent, hair scanty and some baldness of vertex and frontal regions. The scalp was thin and the vessels prominent and tortuous. The eyebrows were elevated and irides partly covered by the under lids. The teeth were irregular and carious. He had a small moustache and "goatee" but the beard was scanty.

The trunk was so much deformed by anterior and lateral spinal curvature that the left iliac crest occupied the corresponding axilla. The body, limbs and genital organs were ill-developed.

Death occurred from exhaustion and with symptoms of an exacerbation of the disease.

Autopsy. C. F., age 38 years; nativity, D. C.; mental disease, imbecility.

Autopsy twenty-four hours after death: Rigor mortis slight; decomposition commencing.

Cranium. The head measured twenty-seven inches in circumference; antero-posterior diameter $9\frac{3}{8}$ inches; transverse diameter 7 inches. After removing the scalp the skull was $25\frac{1}{2}$ inches in circumference; occipito-frontal diameter $9\frac{1}{2}$ inches; biparietal diameter $6\frac{3}{8}$ inches. The skull was asymmetrical, the left frontal, and the right occipito-parietal regions being more prominent, making a difference of half an inch between the two oblique diameters.

The skull was thinner than usual and somewhat dense, but the diploe was normal in proportion. The sutures including the frontal, were all well marked in the external table but the lambdoid and sagittal were obliterated in the inner table. No ossa triquetra were found. The depressions made by the convolutions and the meningeal arteries were unusually distinct. The cerebral fossae seemed more shallow than usual, the orbital plates were somewhat flattened, and the pituitary fossa large and deep.

A paraffine cast was taken of the interior of the skull; it displaces about $98\frac{1}{2}$ ounces of water showing the cranial capacity to have been about 178 cubic inches.

Brain. The dura mater was normal in appearance and not adherent to the bone; the pia mater was normal; the cerebral vessels moderately filled and the arteries at the base were healthy.

While removing the brain the ventricular cavity was accidentally opened and 57 ounces of clear fluid escaped. The brain collapsed and lay in folds at the base of the skull.

The brain weighed $43\frac{1}{2}$ ounces; the left hemisphere, $20\frac{1}{4}$ ounces; the right, 18 ounces; the cerebellum, pons and medulla $5\frac{1}{4}$ ounces.

The convolutions were much flattened, the fissures shallow, and some of the latter were obliterated. The central fissure and convolutions were distinct on both sides and the fissures and convolutions of the occipital lobes were but slightly altered.

The cerebral substance was in some places not over $\frac{3}{16}$ of an inch in thickness. The thinnest portions were in the left frontal lobe and the right frontal and parietal lobes; the right side was considerably thinner than the left.

On opening the ventricles the lateral and third were found to be greatly dilated, having a capacity of at least 54 fluid ounces. The aqueduct of Sylvius and the fourth ventricle were not dilated. The gray commissure had been destroyed, the septum lucidum extremely attenuated, and the foramen of Monroe greatly enlarged. The basal ganglia were flattened and distorted and a small brown softening was found in each lenticular nucleus.

The ependyma was thick, tough and fibrous, and in some places had a reticulated appearance.

The brain tissue was pale and somewhat softened by post-mortem change.

The cerebellum, pons and medulla presented no unusual appearances except that the lining of the fourth ventricle was in a condition similar to that of the other cavities. The thorax was much deformed and the lungs corresponded in shape to that of the thoracic cavity. A few scattered calcareous nodules were found in the right lung.

The heart was small, but otherwise normal.

Spleen weighed $1\frac{1}{4}$ ounce, pulp normal.

Liver normal; gall bladder contained nine rough calculi.

The left kidney weighed 3 ounces; the right, $2\frac{1}{2}$ ounces; structure apparently normal.

No mechanical or other cause was discovered for the effusion, but the condition of the ependyma indicated that the disease may have originated in a chronic inflammation of this membrane, and that the process was arrested in time to allow of closure of the sutures without the formation of supernumerary bones.

RADICAL CURE OF PTERYGIUM.

Read to the Mitchell District Medical Society, at French Lick Springs, Indiana, June 22, 1888.

BY DUDLEY S. REYNOLDS, A.M., M.D.,

PROFESSOR OF GENERAL PATHOLOGY, HYGIENE, AND DISEASES OF THE EYE AND EAR, IN THE HOSPITAL COLLEGE OF MEDICINE, MEDICAL DEPARTMENT OF CENTRAL UNIVERSITY OF KENTUCKY, LOUISVILLE.

Pterygium has been variously described as being cicatricial in its nature, as due to small ulcerations in the limbus conjunctivalis, and as a genuine hypertrophy of the conjunctiva. A little attention to the anatomical characters of pterygium will show that the portion in contact with the fascia is made up almost entirely of abnormal connective tissue fibre.

It will be observed that the pterygium is not so broad upon its under surface as it is externally. There is a well-marked fold running longitudinally along its margins from apex to base. This marks the site of cicatricial tissue, which causes contraction to take place at the bottom of the growth, which seems to be most dense at the limbus of the conjunctiva, whilst that part which seems to overlap the cornea is formed by a folding in of that portion of the anterior elastic layer of the cornea which is involved in the apex of the growth. The capillary blood-vessels at the limbus of the conjunctiva are observed to be much altered. They are irregular in form and size, presenting the appearance of the new capillaries in callous tissue. The amount of connective tissue fibre and the number of wandering cells in the substance of the morbid growth serve to swell its bulk. If the pterygium be excised, the tendency to cicatricial formation is commensurate with the number of vessels divided. If no infecting material gain access to the wound, a large mass of irregular connective tissue fibre results from the changes which take place in the leucocytes and the wandering cells found in the loose network of cellular tissue always abundant in the ocular conjunctiva.

Arlt and Hasner have given much attention to this subject. They are persuaded that ulceration of the cornea at its periphery has little or nothing to do with the development of a pterygium. The well-known pinguecula which results from ulceration of the limbus conjunctivalis is always a purely local affection. It may be frequently observed in persons who have had purulent conjunctivitis with chemosis. In these cases, the loss of surface epithelium allows the overlapping conjunctiva to become adherent to the anterior elastic layer of the cornea; and when the infiltration disappears as the swelling goes down, the little loops of the conjunctiva which were folded up are attached to the surface of the cornea, and present the characteristics of what is commonly called pinguecula. This never extends out over the surface of the globe. It does not correspond to the direction of one of the recti muscles. On the other hand, pterygium always overlies one of the

SEA-WATER IN LONDON.—The London Sea-water Supply Bill has passed both houses of Parliament. The sea-water will be brought to London from Sussex County. It is thought that the works will be completed by 1890. As London grows the supply of fresh water becomes scarcer, and it is hoped that the sea-water will be used for bathing and street watering.

recti muscles; it always extends either from the caruncle or from the sulcus of the palpebral fold; it is always both broader and thicker at its base; thinner and more vascular as it proceeds towards the apex. The apex is always formed by a folding in of the anterior elastic layer of the cornea; and the greater the amount of cicatricial tissue developed at the bottom of the apex, the further will the apex of the pterygium extend upon the corneal surface, the tucking in of the edges being brought about by the contraction of the abnormal connective tissue which results from an interruption of the passage of the leucocytes through the subconjunctival cellular tissue into the organized lymph tubes designed by nature to receive these cells.

It is clear, therefore, that pterygium partakes of the nature of a neoplasm. There can be little doubt it begins in the presence of some local irritation, which may perhaps be brought about by the presence of particles of sand, or such other irritating foreign matter as may be lodged upon the surface of the exposed portion. Wherefore pterygia are most commonly observed on the nasal or temporal side, by far the most frequently on the nasal side, owing, no doubt, to the facility with which minute particles of foreign matter gain access to the semilunar fold, where the irritation which leads to the flooding of the subconjunctival cellular tissue in this region with leucocytes, through the dilated capillary vessels, is brought about. Pterygium may, therefore, begin its development in an insidious manner and remain stationary for an indefinite period. Once begun, however, it may be incited to fresh activity in the presence of those causes which originally inaugurated it. Once the anterior elastic layer of the cornea is fairly invaded, the disturbance in the outlet of the leucocytes in the capillary loops of the limbus of the conjunctiva being permanently established, this portion of the growth advances with great rapidity. It is, therefore, important that some operative interference with the advancement of the corneal invasion should be instituted as soon as active development has begun, because that portion of the cornea invaded can never be fully restored to its normal transparency; and so the pterygium should not be permitted to advance into those portions of the cornea through which light is transmitted to form visual impressions on the retina.

Nearly all of the operations that have been suggested have proven unsatisfactory. There are two forms of operative interference, however, that may be accounted fairly successful, namely: the complete excision of the whole mass, and the closure of the resulting wound by stitching the normal conjunctival membrane together with fine silk sutures. There should be incisions made at right angles to the line formed by the wound made in the removal of the pterygium, to allow the flaps

of the conjunctiva to stretch well over the surface which the morbid growth occupied. It should be remembered in dealing with the apex of the growth, there must be no mistake about the removal of the whole amount of morbid tissue. It is better, therefore, to tear off that part which is attached to the cornea by grasping the whole of the pterygium in the limbus of the conjunctiva with Graefe's fixation forceps, and making such traction upon the pterygium as will completely tear off from the corneal surface the whole apex of the growth.

Another method, and the one which I prefer, is a slight modification of Pagenstecher's operation. Pagenstecher dissects off the apex of the pterygium and, turning it back, closes the conjunctival wound with sutures.

This represents the outline merely of the operation that I have found most successful. My plan is to tear off the apex of the pterygium from the surface of the cornea and, if any small portions should remain adherent, to shave them off carefully with a cataract knife. It is better, even, to cut into the proper substance of the cornea, removing a small portion of the unimplicated tissue, than to leave even one abnormal connective tissue fibre on the surface; for this will certainly undergo persistent contraction. The next step in the operation is to divide the normal from the abnormal tissue along the margin of the morbid growth, down to its base. Then, seizing the apex of the growth with the forceps, the loose connective tissue which holds it to the surface of the ocular fascia may be severed with scissors. A free flow of blood should be regarded as auspicious. The conjunctiva may then be stitched together, and circular incisions made both above and below, corresponding to the corneo-scleral juncture, for the distance of $\frac{1}{4}$ -inch from the line of union sought to be established by the sutures. Radial incisions should then be made in the vertical meridian sufficiently to allow the ocular conjunctiva to stretch freely over the surface without having it thrown into folds. Incisions may be made at right angles to the line of union at the base of the pterygium, to relieve tension at this point. The pterygium itself should be allowed to lie undisturbed in its basilar attachments. The sutures will come away from the conjunctiva in three or four days at most, when good union will be found to have occurred along the whole line, while the pterygium itself undergoes rapid shrinkage, and disappears by the resorption of its constituent elements.

This character of operation may be made applicable to all forms of pterygium. Having practiced the operation for more than fifteen years, and never having witnessed a return of the growth at the site of its original development, I am persuaded this method is entitled to rank as a radical cure.

MEDICAL PROGRESS.

DIAGNOSTIC VALUE OF INSPECTION OF THE URETERS IN SYMPTOMLESS HÆMATURIA AND PYURIA.—MR. E. HURRY FENWICK says: In the exploration of the bladder with the electric light it is necessary to have some such starting point in order that the examination may be systematic, rapid and effective. The most important section of the bladder, speaking cystoscopically, is the inferior zone, and the cardinal points in this area are the orifices of the ureters. Upon them the operator should first direct the light, and from them the search should radiate. There are several reasons for this choice. From the orifices of the ureters may be seen to issue fine jets of renal blood in kidney bleeding, the semi-visibility of which may prove fallacious (without the cystoscope) in the diagnosis of the source of symptomless hæmaturia. Upon their lips or in their immediate neighborhood are most often to be found those tumors which can baffle diagnosis. Moreover, their appearance, their clean-cut, slit-like openings, or their tumid, gaping mouths—that is, their healthy or unhealthy aspect—is an index to the soundness or unsoundness of the remainder of the mucous membrane, which cannot be neglected in the treatment or prognosis of disease.

In hæmaturia I generally first satisfy myself that the ureters are free from tumors, and then make a rapid survey of the rest of the bladder, proceeding from below upwards (that is, inversely to the tendency the zones evince to growth).² If I can find no cause for hæmorrhage I return to the orifice of each ureter, and watch the color and amount of its efflux. In three cases lately I have thus been able to detect the renal source of symptomless hæmaturia, which otherwise I might have overlooked.

Case 1.—Mr. B., consulted me in January 1888, in reference to a hæmaturia. He brought with him a specimen of bloody urine containing much clot. His history was as follows: In January, 1886, he had been out riding for two hours, and came home completely chilled. He passed blood the same evening. He suffered no pain or inconvenience, except a slight urethral tingling when the clots were passing. The hæmorrhage stopped in the summer, but recurred in the winter of 1887, to cease once more upon the advent of the warmer weather.

Present Condition.—"A well-built, anæmic man, æt. 30. The urine is voided thrice a day. No

pain attends the act. He suffers 'agony' after coition, in the neck of the bladder. In micturating he has noticed that the urine often becomes more bloody towards the finish."

I expected to find a vesical growth with the electric light, but nothing abnormal could be discovered. The entire bladder was healthy. I was just giving up the examination in despair, when I saw a stream of brightish blood shoot right across the prism. Keeping the instrument fixed, I waited until the medium became clear again, and then I found that I was watching the orifice of the right ureter. In another second a jet of bloody urine burst from the tiny opening, and, after forming many rings, faded by diffusion and disappeared, but only to be replaced by a successor. The phenomenon of efflux suggested to my mind a miniature cuttle-fish, squirting out its colored fluid into the water around. The right renal source of the hæmorrhage was at once indicated.

Case 2.—Mr. C. (under the care of Drs. Underwood and Harvey), a well-built man, æt. 52. Since May, 1887, he had suffered from hæmaturia, which was painless and intermittent in its character, and seemed more dependent upon exercise than anything else. The urine was passed thrice a day. He was disturbed only once at night. Some specimens of hæmaturia contained cylindrical clots. I passed the electric cystoscope under cocaine, and found a low collarette of prostatic growth, but it was obviously not the cause of the hæmorrhage. The bladder was healthy. I could see jets of blood issuing from the right ureter, and the diagnosis of the site of the trouble was at once established.

Case 3.—A lady, under the care of Dr. Hewitt, of Manchester, and Dr. Battersby, of Cannes. For eighteen months the patient had suffered from hæmaturia. The urine varied much in color, but there were no symptoms whatever to afford a clue as to the exact source of the bleeding. The electric cystoscope (No. 30 French gauge) showed the bladder to be perfectly healthy, but on turning the instrument towards the left ureteral orifice, a spurt of bloody urine flowed over the prism. I allowed the ureter to play upon the prism, in order to judge of the rhythm of the flow, but it never varied, although Drs. Hewitt, Lys, and I watched it for some little time. It was rather like an artery severed under water. I could detect no renal tumor in any of these cases.

These cases are sufficient to illustrate the value of inspecting the orifices of the ureters by means of electric light, and of excluding the kidneys as a source of the hæmaturia; moreover, the same advantage can be gained in pyuria, and the many methods and instruments advised and devised for obtaining urine direct from either kidney must now be partially superseded by the electric light.

¹Single villous papillomata are found at the right ureteral orifice in 43 per cent., and at the left in 26 per cent. of the cases. Fibromata and small single myxomata in 90 per cent. of the cases are situated at the ureteral orifices. Author, *Lancet*, March 10, 1888.

²The liability of the three zones to become affected by single cancerous growths may be expressed thus: The upper: middle: lower zone: 1:3:6. Author *Pathological Transactions*, Carcinoma of the bladder, 1888.

The urethral orifices are not difficult to find. They are very rarely displaced, and still more rarely are they absent. A little tact in manipulation and knowledge of the cystoscope will bring them into view, and amply repay the operator for examining them.—*Brit. Med. Jour.*, June 16, 1888.

THE "POLYCLINIC CARRIAGE" FOR EXTENSION AND COUNTER-EXTENSION.—DR. A. B. HIRSCH, of Philadelphia, has designed a simple apparatus to keep up continued traction—therefore, rest—while securing the advantage of out-of-door atmosphere. Its first occupant was a stout 2-year old boy, of the flaxen-haired, strumous type, the subject of incipient coxalgia. The value of complete rest in bed in this disease, with the difficulty of obtaining good hygienic surroundings in so many city homes, particularly in the summer season, are familiar. The "carriage" was therefore planned to meet these objects.

The carriage is an ordinary wicker-work perambulator, the body of which has been lengthened to fit the size of the patient by dividing vertically and exactly in the middle both the head and foot pieces, which are then straightened out and a new bottom made, neatly painted wooden boards being inserted to fill out the spaces at either end. Inside the entire length of the bottom of the body is placed an inclined plane of very light pine board, which rests in front on a block some two inches high. This inclines the child's body sufficiently upward to furnish a weight of three pounds, when the rubber band, to be mentioned later, is stretched about twelve inches. A light hair mattress and pillow suffice to cover in the bottom of the carriage. Sandbags prevent any lateral motion.

The ordinary adhesive strap and stirrup apparatus being attached to the limb from below the hip (in this case the left one), a cord is fastened through the middle of the stirrup, passing through two screw eyes, one fastened to the footboard opposite the instep and the other at the right-hand angle. Then the cord passes backward to a heavy rubber band fastened to a hook screwed into the headband alongside and above the child. Any increase of traction can be made by simply further stretching this band, originally intended for closing doors when ajar. It was my intention to pass the cord from the stirrup, through the footboard and under the body of the coach, so as to attach a weight, but Dr. H. Augustus Wilson suggested the use of screw eyes and rubber band. His improvement, besides simplifying the apparatus and making it more slightly, avoids the painful jarring made in passing over gutters and all other rough surfaces.

In a similar coach since made, I obtained a greater inclination backward by simply screwing a hook underneath the body and fastening an-

other such heavy band which passes around the rear axle.

The idea can, of course, be elaborated for more fastidious patients. The parts needed for the coach are supplied in Philadelphia by Gustavus A. Gefvert, orthopedic machinist, and Messrs. Charles Lentz & Sons, No. 2130 Master street, surgical cutlers.—*The Polyclinic*, July, 1888.

ARTIFICIAL FEEDING OF INFANTS.—DR. A. JACOBI, of New York, in a paper on the "Therapeutics of Infancy and Childhood," in the *Archives of Pediatrics*, says:

The principal substitutes for breast-milk are those of the cow and goat. The mixed milk of a dairy is preferable to that of one cow. Cow's milk must be boiled before being used. Condensed milk is not a uniform article, and its use precarious for that and other reasons. Goat's milk contains too much casein and fat, besides being otherwise incongruous. Skimmed milk, obtained in the usual way, by allowing the cream to rise in the course of time, is objectionable, because such milk is always acidulated. The caseins of cow's and woman's milk differ both chemically and physiologically. The former is less digestible. There ought to be no more than 1 per cent. of casein in every infant food. Dilution with water alone may appear to be harmless in many instances, for some children thrive on it. More, however, appear only to do so; for increasing weight and obesity are not synonymous with health and strength. A better way to dilute cow's milk, and at the same time to render its casein less liable to coagulate in large lumps, is the addition of decoctions of cereals. It has been stated before, that a small amount of starch is digested at the very earliest age. But cereals containing a small percentage of it are to be preferred. Barley and oatmeal have an almost equal chemical composition; but the latter has a greater tendency to loosen the bowels. Thus, where there is a tendency to diarrhoea, barley ought to be preferred; in cases of constipation, oatmeal. The whole barley-corn, ground for the purpose, should be used for small children, because of the protein being mostly contained inside and near the very husk. The newly-born ought to have its boiled milk (sugared and salted) mixed with four or five times its quantity of barley-water; the baby of 6 months equal parts. Gum arabic and gelatin can also be utilized to advantage in a similar manner. They are not only diluents, but also nutrients under the influence of hydrochloric acid. Thus in acute and debilitating diseases, which furnish no, or little, hydrochloric acid in the gastric secretion, a small quantity of the latter must be provided for.

ALUM IN FURUNCLES OF THE EAR.—GIAN reports good results from alum solution in furuncles in and about the ear.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 4, 1888.

SIOUX MIDWIFERY IN CHICAGO.

We have lately encountered a striking example of irresponsible opinion, that is especially noteworthy as well on account of the vital moment of the issue, as by reason of its professional origin. As Kucher has aptly written, we must allow any physician the utmost liberty in his view and treatment of those morbid and physiological conditions, the nature of which is still in a measure conjectural. In the management of a case of hysteria, or in the administration of many internal remedies, the greatest latitude of opinion must be permitted. But in matters of vital moment, about which we have the firmest convictions, based upon the most conclusive evidence, no such differences of view can be for one moment tolerated. There is none of us that hesitates to denounce as an ignoramus or humbug the physician that proposes faith cure or some internal remedy for a luxation. Our intolerance is only intensified when such a physician alleges long and successful experience with the aforesaid therapy.

The case in point relates to a peculiar method of management of the third stage of labor, and the advocate of the procedure is a woman, that alleges the successful employment of the method for twenty-five years, in an experience of more than one thousand cases of confinement. She is legally qualified to practice medicine in the State of Illinois.

In an unique essay, recently published and

widely circulated, she formulates the following conclusions:

1. "The uterus of the parturient woman should, in each and every case, be examined immediately after the expulsion of the fœtus, before the lower or cervical portion of the organ has had time to contract.

2. "This, the only opportunity of gaining a perfect knowledge of the condition of the uterine walls and annexa, should not be lost, as it can be done without injury to the patient, but to her great advantage.

3. "The parturient uterus should be as perfectly cleansed as possible. If there are such firm adhesions that they cannot be removed by gentle manipulations, we should advance the welfare of the patient by thorough irrigation of the genital tract, and by hot poultices to the abdomen. This should be done because high temperature hastens the sloughing process; and as ordinary observation has taught us that old decaying matters are less poisonous than fresh, we have good reasons for hastening the process. This explains, too, why a woman who absorbs poisonous matter during the later periods of childbed has better chance of recovery than one who becomes infected within the first twenty-four hours. It is said that this is because the uterus is further advanced in reconstruction, but this can only hold good with a uterus that had been wholly emptied, immediately after the birth of the child, because the uterus is not in a condition of perfect involution at the third day, and certainly not if left to its own devices."

In her own words, this female makes it "a fixed rule to examine the uterine cavity in each and every case of confinement, and to remove the placenta by passing the right hand up to its insertion and detaching it by friction with the finger aided by the left hand on the outside, carrying it down and out into the vagina. Then," she writes, "going over the organ again I gently remove the still adherent membranes, rubbing the velvety place of placental insertion in order to prevent any undue fibrous occlusion of veins, I am convinced of the usefulness—no, the necessity—of such a practice."

A patient cheerfully describes the procedure thus: "Dr. — take the insides out of me, the same as I would take them from a chicken, and I feel as well afterward as if nothing had occurred."

While the woman, herself, naively volunteers the information, "I know the condition of a woman's pelvis after I have attended her in parturition as I know her face."

We do not intend to reflect upon the intelligence of our readers by any discussion of this monstrous procedure. The author's own words are sufficiently damnatory and we can add nothing to their fatal evidence.

It is at once apparent that the method is both needless and meddlesome. The adequacy of the Dublin or Credé's mode of placental delivery has long been demonstrated by the universal experience of the profession. Thus out of 48,249 labors, in the lying-in wards of Carl Braun¹, during 11 years—1862–1872—the placenta was expelled by this method in 48,132 cases, or 99.8 per cent. It was found necessary to detach the placenta by the hand introduced within the cavum uteri in only 117 cases, or 0.02 per cent., or once in 500 cases.

The terrible danger of infection must be obvious to the most casual observer, to say nothing of the interference with puerperal thrombosis, the risk of air embolism and the like.

Just at the present time, too, in the light that the researches of Schröder, Stratz and others have thrown upon the physiology of the third stage of labor, the broaching of such a gratuitous and pernicious doctrine seems peculiarly inopportune. It is an anachronism. This method was extensively employed many years ago by the semi-civilized midwives of China and Russia, and a closely similar custom formerly obtained among certain tribes of North American Indians—notably the Sioux, Cheyennes, Arrapahoes and Papagos.² It must be admitted, however, that in general primitive peoples have placed main reliance on abdominal expression—the use of a *vis a tergo*—in the delivery of the placenta, and they have in some degree appreciated the dangers from traction on the cord and manual removal.

For the sake of the poor unfortunates that are liable to fall victims to this brutal relic of barbarism, we trust the practice will receive the immediate attention of the State Board of Health. Certainly such flagrant transgression of the laws of medical science demands serious investigation at the hands of the guardians of the public health.

A GASTROLITH IN MAN.

In the *Zeitschrift für klinische Medizin*, Bd. xiv, Hft. 3, KOOYKER describes the remarkable case of a druggist, aged 35, who had a circumscribed tumor of the abdomen, occupying the epigastric and almost the whole left hypochondriac region. Its position was changed by the respiratory movements. It was the seat of spontaneous pains; and pain was also produced by pressure on the neoplasm. These pains subsided somewhat under a strengthening régime and the use of condurango bark. The appetite was increased, and the alvine evacuations became normal. At times the patient vomited a large quantity of mucus mixed with bile. The vomited matters rarely contained free hydrochloric acid. The patient said that he had a continual nausea, and that he had vomited blood. Emaciation and pronounced cachexia finally came on, with indolent tumefaction of the axillary and subclavicular ganglia. He refused to have exploratory laparotomy done, and the diagnosis of cancer of the pylorus was made.

At the autopsy the stomach, which was of normal size, was found to contain a concretion that almost completely filled the stomach, and having its form. Two small concretions filled the pyloric region of the stomach. The large gastrolith weighed 885 grams, was 18 cm. long, and 8 cm. thick (7.2 inches by 3.2), and of a brownish color. In place of a nucleus there was a small cavity, as large as a hazel-nut, in the centre of the concretion. The cut surface showed no concentric stratifications. The mass had a feculent odor, and contained no skatol. Microscopic examination showed that it contained starch corpuscles, vascular fasciæ, and vegetable cells containing chlorophyll, but there were no organized elements belonging to the animal kingdom. Chemical analysis showed that it did not contain more than 0.56 per cent. of nitrogen. The mucous and muscular coats of the stomach were thickened, and in the region of the cardia the mucous coat was studded with projections of papillomatous tissue.

It seems that an exploratory laparotomy, which the patient refused, might have been the means of saving the life of this patient.

DR. KIESSELBACH, Privat Docent at Erlangen, has been made Professor Extraordinarius in the Otiatric Clinic and Polyclinic.

¹Lehrb. d. g. Gynäkologie. Wien, 1881. p. 152.

²Geo. J. Engelmann. Labor Among Primitive Peoples. St. Louis, 1883. p. 153.

EDITORIAL NOTES.

A HANDBUCH DER SPECIELLEN KLIMATO-THERAPIE UND BALMOTHERAPIE will be soon published by H. Reimer, of Berlin.

DR. SERAPIO ARTEAGA, a distinguished physician of Havana, and well-known contributor to medical literature, died in Mexico on July 6, of cerebral congestion.

MM. HÉVARD AND CORNIL, with the assistance of M. Hanot, have just issued through Felix Alcan the second edition of their classical work "*Traité de la Phthisie Pulmonaire*," which has been out of print for some time.

ADULTERATION OF MILK.—DR. H. THORNS, in examining a sample of suspected milk, found ultramarine blue, in the proportion of 0.0823 per litre. This milk, when left for a time, showed a bluish color at the surface.

THE "REVUE SCIENTIFIQUE DES FEMMES" is a new journal recently founded in Paris, and edited entirely by women. It is edited by Mlle. Edwards, interne of the hospitals of Paris, Mlle. Chenu, licentiate in mathematical sciences, Mme. Brès, M.D., Mme. Simonnet, B. Sc. and professor of physics, and Drs. Mmes. Conta, Kraft, and Rose Perrée.

THE PROPOSED MEMORIAL TO VON LANGENBECK is to be in a form of a building, the "Langenbeck-haus," which, according to the *British Medical Journal*, is intended to be a home for all medical associations, and a place for scientific gatherings. The names of the late Emperor Wilhelm I and his Empress Augusta stands at the head of the list, and it was the Empress that suggested that the memorial should be a building rather than a statue.

SACCHARIN, says M. C. PAUL, has valuable antiseptic properties. It is this fermenticide action of it that acts on the gastric juice and retards digestion in certain diseases. Paul says that numerous experiments on a large number of microbes have shown the antiseptic properties of saccharin. It is an antiputrescent; in 1:200 solution it arrests ammoniacal fermentation of urine. In the same solution it arrests the development of bacterium termo, in a 1:300 solution it retards, but does not arrest the development of the strepto-

coccus of puerperal fever, and in a 1:500 solution it arrests the development of the staphylococcus pyogenes aureus. As the drug is eliminated entirely by the kidneys, it may be asked if it will not act favorably on pyelitis and pyelo-nephritis. Clemens has had good success with it in two cases of vesical catarrh with ammoniacal urine. Saccharine may be substituted for boracic acid for washing out the bladder.

AMERICAN MEDICAL ASSOCIATION.

Report of the Committee upon the Coroner System of the United States.

Made at the Thirty-ninth Annual Meeting of the American Medical Association, May 1888.

This Association imposed upon your Committee a task of no slight magnitude, in requiring a report upon the Coroner System of this great country. The work of collating and digesting the laws, as existing in the various States required much time and thought. This has been, however, simplified in a great degree by utilizing the publication of Dr. John G. Lee, entitled, "Hand-Book of Coroners," Philadelphia, 1881.

Your Committee also placed themselves in correspondence with the Secretaries of the various State Boards of Health and elicited a mass of correspondence, comment, and facts of very great value. To these authorities we take much pleasure in acknowledging our obligation, and upon a careful examination of the same we find almost without exception, comes the criticism of faulty results from inherent defects in the present laws.

A careful analysis of the Coroner's laws reveals the fact that their preparation and scope, with only slight modification have been made in transcript from the old English code of time-honored custom. The important exception, however, is noteworthy, that they have been adapted to *American politics*, by the party in power usually giving the office to the holder, too often as a subsidy for supposed services rendered, rather than because of fitness to discharge duties of so great importance to the State.

In the progress of legal learning, as well as in medical requirement, these two great branches of special knowledge have greatly outgrown their former status and to be well versed in both is utterly beyond the training and education of the present generation. The former idea of fitness, fundamental to the Office of Coroner, was a medley of both legal and medical knowledge, without specific limitation or definition. Resulting therefrom, has grown up such indefinite ideas pertaining to the office and duties of Coroner that,

in many instances, he has been appointed without knowledge of either law or medicine, and under the laws existing in most of the States it is about equally the mistake to select the Coroner from either of the professions.

In one of the large cities, through which we passed on our way to this meeting, a delegate to the Association informed us that the office was held by a colored man and an Irishman, and this by illustration of neither color or race prejudice, but to the manifest low order to which the office had fallen, since these men were both illiterate. Dissatisfaction necessarily results from incongruities arising under such laws as well as from the improper selection of men manifestly unfitted to discharge duties often so vital to the well-being of the body politic.

From the legal profession protests are constantly being made that the high ends of justice often fail under our present laws; while for many years from one end of the land to the other has gone out a demand from our own profession for a radical reform. So deeply ingrained, however, is the system into the body politic, with the power and influence of the present-office incumbents and the lack of concerted combined action, that very little progress has been made in the right direction.

Dr. Quimby, in his address last year before this Association, very properly called attention to this great national necessity, and as a result of his earnest appeal your Committee were appointed.

Granting the necessity of reform based upon such abundant testimony, your Committee have thoughtfully considered the measures to be commended from which a better system may be evolved.

Fortunately they are not entirely without precedent and experience to guide them. Eleven years ago, after much labor and concerted effort, Massachusetts abolished her Coroner's system and passed an Act providing for medical examinations and inquests in cases of death by violence. We are indebted to Dr. Samuel W. Abbott, the efficient Secretary of the State Board of Health for much information upon the working of the law. The system of Medical Examiners meets with a very distinct general approval, and has the hearty coöperation and support of the medical profession.

Since the passage of the law about 15,000 cases have been investigated by the Examiners. As compared with the same amount of work under the old law, the expense has been considerably lessened, while the results have been vastly improved.

Connecticut adopted, in 1883, a new law electing a lawyer as a coroner for each county, and a medical examiner for each town. I briefly extract from a letter received from Dr. M. C. White, Medical Examiner for New Haven: "One feature of our new law giving all the business of the

county to one lawyer secures immediate investigation by an experienced officer who understands law and the best methods of examining witnesses.

He must investigate immediately all suspicious cases. He may call a jury. All this works admirably. Three-fourths of all the sudden, violent, or untimely deaths are disposed of by the medical examiners, reported and recorded, but require no legal investigation, since there is no suspicion of crime. . . . After nearly five years of experience under the present law I think the defects or questionable points are so few that we may say there is pretty general satisfaction with the law."

Rhode Island adopted a new law somewhat recently similar to that of Massachusetts, and Dr. Charles H. Fisher, Secretary of the State Board of Health, writes me that "it is a great improvement upon the preceding law and methods."

Your Committee desire to formulate in greater detail the results of their labors, much of the material which they have received being of value, but manifestly quite out of time and keeping for this occasion, but they commend for earnest consideration in each of the several States the following propositions:

1. To abolish the office of Coroner.
2. To dispense with jury service.
3. To separate the medical from the legal duties in all cases involving the examination into the causes of death where crime is suspected.
4. To entrust the medical examination only to competent medical officers properly trained in their work.
5. To make the number of these medical officers as small as consistent with the proper discharge of their duties.
6. To consign all questions of law only to properly qualified legal magistrates.
7. To remove the appointment of these officers entirely from the question of political consideration, and to be based only upon their possession of the requisite and proper qualifications.

Upon some basis of this character should the Coroner's law be revised. Much useless expenditure of time and money will be avoided, often great sorrow and anxiety will be prevented, and that which is of vastly greater importance, the ends of justice will be far better served.

Owing to the vital importance of the subject, the difficulties of carrying into effect a sweeping revolution of time-honored customs, and in the hope that this great central organization may in some way be of service to any State endeavoring to secure a better law, your Committee, much against their personal desire, are constrained to ask to be continued for another year with the power of enlarging its numbers if deemed advisable.

Thus, with ample time to review and select from the material on hand, and that which may be for-

warded to us by all interested in the subject, we shall hope to give a *résumé* of the Coroner's laws, their workings, defects, and suggestions as to reform and to the establishing of laws which shall be effective in every State of the Union.

HENRY O. MARCY, of Boston.

J. H. HOBART BURGE, of Brooklyn, N. Y.

W. W. DAWSON, Cincinnati.

SOCIETY PROCEEDINGS.

American Ophthalmological Society.

Twenty-fourth Annual Meeting, held at the Pequot House, New London, Conn., July 18 and 19, 1888.

WEDNESDAY, JULY 18, FIRST DAY.

THE PRESIDENT, DR. W. F. NORRIS, of Philadelphia, called the Society to order.

The deaths of Dr. C. R. Agnew, Dr. E. G. Loring and Dr. Joseph Aub, were reported.

DR. H. D. NOYES, of New York, read a memorial of the late Dr. C. R. Agnew.

DR. C. S. BULL, of New York, read

A CONTRIBUTION TO THE TREATMENT OF MEMBRANOUS OPACITIES IN THE VITREOUS.

These opacities in the form of membranes or shreds are rarely freely movable and usually resist internal treatment. Operation by incision with a needle was first performed by von Graefe. In the experience of the writer the operation had been found useful. Some opacities, as a result of hemorrhage or inflammation of the choroid, sometimes respond to internal remedies, but as a rule these fail. By incision of the membrane a direct improvement of vision may be obtained and the process of absorption may be stimulated. Posterior opacities are more easily reached, with less danger to the lens and with more favorable results, than in the case of anterior opacities. The author has done this operation in seventeen cases of chronic membranous deposits in the vitreous. In some cases the ordinary decision needle was used, in others a broader needle, and in a few a slender cataract knife. Cocaine was employed in all cases. The point selected by preference for the introduction of the needle was just in front of the equator of the eye and below the insertion of the external rectus muscle. There seems in this operation to be no danger of loss of vitreous through the small opening, nor is there danger of hemorrhage. The puncture should be posterior to the ciliary process and pressure with the forceps should be avoided. Little or no retentive bandage is required only a few days. Antiseptics was employed in all cases.

The details of the seventeen operations on

fifteen patients were given. Fourteen showed decided improvement in vision; three were failures. There was no loss of vision from the operation in any case. The operation is appropriate in certain cases, but it is wise to wait until all inflammatory symptoms have subsided before attempting any operative procedure. The eye should be absolutely free from all irritation before surgical interference is attempted.

DR. F. BULLER, of Montreal, read a paper on

A CASE OF PULSATING EXOPHTHALMOS CURED BY LIGATION OF THE COMMON CAROTID.

The author had seen four cases of this affection. In the first the condition followed a blow upon the head. Some months after the appearance of the pulsating exophthalmos, ligation of the carotid was performed, but the patient died in the course of a few weeks from repeated attacks of epistaxis.

The second case has already been reported. In the third case the affection followed a blow on the brow from a piece of iron. The patient was seized with severe epistaxis and died in a few minutes. There was found a depressed fracture of frontal bone with a fissure extending across the orbital roof and body of sphenoid bone, directly beneath the cavernous sinus. As a result of caries of the bone there was a direct communication between the nasal cavity and the internal carotid artery.

The fourth case, the subject of the paper came under observation May 24, 1888. A young man, aged 28, fell a distance of twenty feet, striking the right side of head, rendering him unconscious for twenty-four hours. After the swelling had subsided the patient noticed diplopia, one image being higher and less distant than the other. There was also a loud beating sound in the right ear. Two weeks before coming under observation prominence of the eye was noticed. There was still diplopia, the higher image moving up and down with each heart-beat. Four days before coming under notice, the pain became intense. On examination there was at the inner extremity of the right brow a swelling which imparted a distinct thrill to the finger. There was also a harsh bruit. Pressure over the common carotid diminished the intensity of the thrill and lessened the pulsation.

It was decided to ligate the common carotid in the upper part of its course and this was done May 25th, two ligatures being applied and the vessel divided between them. The immediate effect was softening of the swelling, partial reposition of the eye-ball, great diminution in the pulsations and disappearance of the bruit. The patient made a good recovery and left the hospital with very little prominence of the ball: $V = \frac{2}{3}$; movements normal.

DR. CHAS. J. KIPP, of Newark, N. J., reported a case of

PULSATING EXOPHTHALMOS.

A lady 76 years of age presented herself with the history that shortly after striking the head in a fall, she noticed a noise in both ears, followed by protrusion of both eyeballs, the right four-tenths of an inch; the left, two-tenths of an inch. There was no marked pulsation, but there was a thrill and a bruit could be heard over the anterior half of the head. This could be arrested by compression of the right carotid and partially so by compression of the left carotid. In view of the age of the patient, no radical measures were recommended, but it was suggested that pressure be made on the right carotid as often as convenient. Iodide of potassium was also given. Three months later the patient stated that the noise had suddenly disappeared. This was followed by the disappearance of the exophthalmus first in the left eye, and subsequently in the right. The external appearance of the eyes is now normal. There is, however, a marked pulsation of the right subclavian artery, but no aneurism can be discovered.

DR. S. D. RISLEY, of Philadelphia: I would call the attention of the Society to the fact that Dr. Harlan reported a case of this kind cured by compression, and that I also reported a case in which compression of the vessel for a short time was followed by disappearance of the symptoms and subsidence of the exophthalmos.

DR. SWAN M. BURNETT, of Washington, read AN ANALYSIS OF 576 CASES OF THE REFRACTION OF HEALTHY HUMAN CORNEÆ, EXAMINED WITH THE OPHTHALMOMETER OF JAVAL AND SCHIOTZ.

These 576 corneæ belonged to 301 persons examined within a little over a year by Dr. Burnett. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found to be the same in both eyes to within 0.25 D. in 110 persons. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 20 eyes. In 88 eyes the meridians were oblique. In 58 eyes the difference in the refraction of the two meridians was less than .25 D. In 101 eyes there was *emmetropia*. The largest number has a corneal refraction of from 44 D. to 45 D.; the next largest from 43 D. to 44 D. The strongest corneal refraction was 47 D., the weakest 39 D. In 55 eyes there was *simple myopia*. The strongest refraction in the weakest meridian was 47.25 D.; the weakest 39 D. The corneal refraction did not in any considerable number of cases bear any close relation to the degree of the myopia. *Simple hypermetropia* was present in 59 eyes. Weakest refraction in the weakest meridian was 40.5 D.; the strongest 46 D. As in myopia, the cor-

neal refraction was no indication as to the degree of general hypermetropia. *Myopic astigmatism* was found in 140 eyes. In 4 eyes the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes the difference in the axes of the corneal membrane and that of the prescribed glasses was greater than 5°. *Hypermetropic astigmatism* was present in 96 eyes. In 4 eyes the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. *Compound myopic astigmatism* existed in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded, and in 44 eyes the axes corresponded. *Compound hypermetropic astigmatism* was found in 55 eyes. In 31 corneal and general astigmatic meridians corresponded. The corneal and general astigmatism was the same in all but 4 eyes. *Mixed astigmatism* was present in 8 eyes. In 4 the corneal and general astigmatism was the same; in 2 the corneal was less and in 1 greater than the general. Corneal and general astigmatic meridians were the same in 5 eyes.

In 42 eyes the general astigmatism was against the rule, while in only 18 of *these eyes* was the corneal astigmatism against the rule. From examinations made under a mydriatic the author felt himself warranted in thinking that many cases of lenticular astigmatism are due to an oblique position of the lens.

Corneal astigmatism is, with very few exceptions, according to the rule (vertical meridian the stronger). From a study of these statistics the author feels warranted in concluding that, while the corneal refraction gives no indication of the general refraction of the eye, its astigmatism, in the vast majority of cases, expresses the general astigmatism both as to degree and direction of it and considers, therefore, the instrument of Javal and Schiotz one of, if not the most important instrumental means for the diagnosis of the anomaly. He does not think astigmatism more productive of progressive myopia than any other form of ametropia.

DR. H. D. NOYES, of New York: In the immense majority of cases the evidences of the ophthalmometer without the use of atropine have corresponded with the evidences of the trial case. The amount of astigmatism and in a general way the axis of the astigmatism is obtained. The use of this instrument has led me to believe that mixed astigmatism is more common than we usually imagine. I have also noted the influence of the eyelids in altering the curvature of the cornea. I have also satisfied myself that the tension of the eye muscles modifies the curvature of the cornea. I have also noticed in some cases a pulsation of the corneal reflex, due to the fact that the cornea was so thin that the circulation of the eye impressed itself upon it.

DR. SAMUEL THEOBALD, of Baltimore: I in-

fer that the author thinks that when a mydriatic is employed, the lenticular astigmatism is done away with. My experience leads me to believe that the asymmetrical condition in the lens does not at once disappear on paralysis of the ciliary muscle. I think that the discrepancy between the total and general astigmatism may often be accounted for by this persistent asymmetrical condition of the lens. This condition gradually disappears after suitable glasses are worn.

Progressive Hypermetropic Astigmatism was the title of a paper read by Dr. J. B. Emerson, of New York.

Dr. Edward Jackson, of Philadelphia, exhibited *A New Form of Cataract Knife*.

Dr. J. O. Tansley exhibited the following instruments:

1. *An Improved Lachrymal Syringe* in which the nozzle ends in a closed bulb, the openings being on the sides of the tube.

2. *A Clamp to prevent the passage of atropine solutions through the lachrymal duct into the nose* in cases in which the free use of atropine is called for.

3. *An Improved Lachrymal Probe, and Improved Stylus*.

Dr. Samuel Theobald exhibited *Probes made of Aluminium*.

Dr. EDWARD JACKSON, of Philadelphia, read a paper on

CEDEMA OF THE CHOROID AND RETINA.

The author reported the case of a young man struck in the eye with a marble or a small stone, causing a bruise of the eyeball. The ophthalmoscope showed localized swellings of the choroid and retina at the posterior pole of the eye; the choroidal spots having the usual grouping of ruptures of the choroid in this region. These spots disappeared in about a week. There was also at first some 0.75 D. myopic astigmatism, which gradually diminished and in three weeks entirely disappeared, leaving the sight perfect.

Dr. W. F. MITTENDORF, of New York, read a paper on

SYMPTOMATIC MYOPIA.

Three forms of myopia may be spoken of: axillary, refractive and symptomatic. The latter form may be caused by traumatism, but more commonly by diseased conditions. It may be produced by displacement of the lens forward. More frequently it is due to swelling of the lens accompanying beginning cataract. This is sometimes relieved by the use of concave glasses; very strong glasses being occasionally required. Plastic exudations may also cause myopia, but these usually so interfere with vision that it is impossible to demonstrate the existence of myopia. Glaucoma, serous choroiditis and iritis are frequently accompanied with myopia as a symptom. A number of illustrative cases were cited. In these

cases the myopia is not permanent, but as the disease disappears the myopia passes away, leaving the refractive condition of the eye the same as before the attack.

Dr. CARL KOLLER, of Vienna: I think that in these cases of myopia in iritis the condition may be due to the irritation of the ciliary muscle. There is hyperæmia of the ciliary body and, as the irides are contracted, it is to be supposed that the ciliary muscle is also contracted. Although atropine may be used there is not full dilatation of the irides. It is, therefore, reasonable to suppose that the myopia is a result of spastic contraction due to inflammation.

Dr. JOHN GREEN, of St. Louis: In two attacks of iritis of which I was myself the subject, I carefully studied this myopia. In my case the eyes were completely under the influence of atropia. The pupils were dilated and the ciliary muscle paralyzed.

EVENING SESSION.

Dr. WILLIAM OLIVER MOORE, of New York, read a paper on

HYSTERICAL BLINDNESS IN THE MALE, WITH A REPORT OF THREE CASES.

Case 1.—Male, æt. 25, farmer, family history good. During past two years had suffered with nervous symptoms. Did not smoke or drink. In June, 1886, complained of failing vision in left eye. When seen June 16, according to patient's statement vision in left eye = 0; in right eye normal. Ophthalmoscope showed normal fundus except a slight patch of opaque nerve fibre near the papilla. Testing with prism and candle gave double vision, as did pressure on one eyeball. The patient was informed that treatment by electricity would cure him in a few days. A severe faradic current was applied, causing the patient to jump from his chair exclaiming there already was improvement. In ten days V. = $\frac{3}{8}$ emmetropic.

Case 2.—Male, æt. 22, student and farmer, fine-looking. History of insanity in the family. Eighteen months previous to coming under observation atropia had been instilled by a physician to determine whether or not glasses were required. He thought from the effect of the atropia that he was going blind. He then put on smoked glasses, subsequently bandages, and kept in a dark room. He would not open the lids and declared that he was blind. For ten months he kept in a dark room with covering over the eyes. On examination the lids were closed, but not by spasm; the cornea clear. V. = 0. Ophthalmoscopic examination under ether, normal fundus. Hysterical blindness was diagnosed and a favorable prognosis given. Canthoplasty was then performed. Coming from the ether the patient opened his eyes and evidently saw clearly. He was told that the cause of the disease had been discovered and that he would be well in a few days. In two days he

was walking around without glasses. Has remained well since.

Case 3.—Boy æt. 15. Developed blindness in right eye after a disappointment at school. Normal appearance of eyes. Tests with prisms and colored glasses showed that vision was present. Ether was administered and patient assured that he would be well, and under electricity recovery was rapid.

DR. CHARLES A. OLIVER, of Philadelphia, read a

DESCRIPTION OF A SERIES OF TESTS FOR THE DETECTION AND DETERMINATION OF SUBNORMAL COLOR-PERCEPTION (COLOR-BLINDNESS) DESIGNED FOR USE IN RAILWAY SERVICE.

It is a well-known fact, both from theoretical and practical standpoints, that many "color-blinds," especially those of medium grades, have the power of differentiation even by daylight of the most difficult colors, when placed at ordinary metre distance, of wool selection employed in the detection and determination of "color-blindness." The writer has been induced through a hope to overcome the dangers that might arise from this power in situations such as railways, marine and naval service, where the safety of lives and the protection of property is often dependent upon proper recognition of color at great distances, and frequently through the intervention of more or less translucent media, to combine two modifications of his method of color selection to a simplified plan of the former procedure by which the candidate is placed in the actual position of after-work and under exactly similar circumstances as during employment. The method is divided into three parts:

First. The selection and registry of a definite number of loose wools from twenty-three pure and confusion match skeins thrown upon a dead black surface at 1 metre distance.

Second. The selection and registry of the same number of similar reflected colors under various intensities of diffuse daylight stimulus, placed at distances requisite for safety.

Third. The selection and registry of transmitted colors under various intensities of artificial light stimulus placed at distances requisite for safety.

In addition to the advantages shown to refer to the first test alone, the method has the following additional ones: 1. Much faster in time than any other method. 2. The selection of loose wools at a distance. 3. No necessity for an expert except in doubtful cases. 4. Employment of the same character of signal for testing as is used in daily routine. 5. Placing the eye during testing at a distance necessary for future safety. 6. Bringing the eye during testing directly before the true condition of weather experienced whilst

it is upon duty. 7. The test and match colors all graduated in proportionate sizes.

DR. CHARLES A. OLIVER also reported a

CASE OF EMBOLISM OF THE CENTRAL RETINAL ARTERY.

The patient, a young man, was seen October 5, 1887. Twenty-six hours previously, while slowly walking in the shade, he was suddenly seized with blindness in the left eye. There were no other symptoms, and there had been no previous illness. The right eye was normal. Ophthalmoscopic examination of left eye showed clear media; nerve substance of a gray tint, and swelling of the retina. All the retinal vessels were reduced in size. The veins were somewhat contracted, especially toward the nerve entrance. The characteristic cherry spot in the macular region was distinct. There was a small hæmorrhage out from the disc. Careful physical examination failed to reveal any lesion in other parts of the body. The case was kept under observation for some time, but there was no return of vision, the patient remaining completely blind in the left eye.

THURSDAY, JULY 19—SECOND DAY.

MORNING SESSION.

DR. SAMUEL THEOBALD reported

A CASE OF DOUBLE CONGENITAL IRIDEREMIA IN A CHILD WHOSE MOTHER EXHIBITED A CONGENITAL COLOBOMA OF EACH IRIS.

James O., æt. 18 months, was seen December 9, 1887. His mother brought him on account of the red appearance which the pupils presented. Upon examination, besides a congenital squint of the left eye, complete absence of each iris was discovered. The lenses were clear and there seemed to be, at least in the right eye, fairly good vision. The interest of the case lies in the fact, accidentally discovered, that there existed in the mother a congenital coloboma of each iris. In her right eye the coloboma was large, its direction being directly upwards; in the left eye it was somewhat smaller and was in an upward and outward direction. In neither eye was the choroid involved in the congenital defect. The mother volunteered the statement that an older child had had a similar appearance of the eyes, so that it is probable that to this mother with congenital coloboma there were born not only one, but two children with absence of the irides.

DR. T. Y. SUTPHEN, of Newark, N. J., read a paper on

PUNCTURE OF THE RETINA FOR DETACHMENT.

The results of three operations were reported. A male 62 years of age sought treatment April 1, 1887, for a cloudy appearance before the right eye. This he had noticed only a few days. He

near-sighted but had never used glasses. Examination R. S. = $\frac{1}{10}$, raised to $\frac{1}{5}$ by $-\frac{1}{16}$. Field of vision defective downwards and towards the median line; tension slightly diminished. L. S. = $\frac{1}{10}$, raised to $\frac{1}{5}$ by $-\frac{1}{16}$. Ophthalmoscope showed myopia with choroiditis in both eyes. In the right eye the retina was found detached in its upper and temporal portion. The patient refused to undergo vigorous treatment in bed. He was given iodide of potassium in gradually increasing doses, rest being enjoined.

Five months later the patient returned with commencing detachment in the upper and temporal portion of the left retina. He was then kept in bed for two weeks with the eyes bandaged, while profuse diaphoresis was frequently induced, but without benefit. He was then sent to the country, the iodide being continued. By December 1 there was in the right eye only perception of light; in the left there was vision confined to the outer and lower field. On this date puncture of the retina from beneath the detachment was made. Thorough antisepsis was employed; cocaine was instilled. A sickle-shaped needle was thrust into the globe between the insertion of the external and inferior recti muscles, on the equator and on a plane with the lens, it was pushed onward until it was thought that the retina had been pierced. It was then withdrawn with a sweeping motion, the object being to enlarge the opening in the retina. Atropine was instilled, the eyes bandaged, and the patient ordered to keep quiet. The following day the subretinal fluid had disappeared, field of vision was normal, a red reflex was obtained from the fundus in every direction and the patient could distinguish large objects. Bandage was reapplied. Two days later patient could count fingers at twelve feet, the retina appeared in its normal position, but the vitreous was quite cloudy. The vision continued steadily to improve. December 10 a similar operation was performed on the left eye. Two days later there was marked enlargement of the field of vision, but some detachment was still to be seen on the temporal side. December 16, field of vision in both eyes normal, no detachment of retina in either. The patient remained in bed twenty-eight days. February 10, detachment began to reappear in the left eye, and by March 3 it was as great as before. Needling was again performed with the escape of very little subretinal fluid. March 5, field again normal. April 1, partial return of detachment in left eye. July 6, seven months after first operation, S. R. = $\frac{1}{10}$, raised to $\frac{1}{5}$ by $-\frac{1}{16}$; no return of detachment, field of vision normal, blindness for red. In the left eye almost complete detachment of the retina.

After referring to the history of the operation, the speaker said that the interesting facts were these: The apparently perfect safety of the operation under modern antisepsis; one success and

two failures under exactly similar conditions, barring the escape of the fluid outwards in the successful case; encouragement to try this operation in otherwise incurable cases; the absolute freedom from all reaction. The best results will probably follow when the operation follows closely upon the subsidence of the acute affection causing the detachment. The chances of success are increased by a free flow of fluid outwards. It was suggested that a narrow Graefe knife might be used after accurately measuring the depth of the detachment, provided the point be so directed that the wound in the retina shall be directly opposite the scleral puncture.

DR. J. F. NOYES, of Detroit: I have tried operative procedure in only one case. I drew off the fluid with a hypodermic syringe. After drawing off the fluid the retina returned to its normal position and the outline of a small tumor was discovered. The detachment soon returned and the ball was enucleated one year later.

DR. F. P. CAPRON, of Providence, reported

A CASE OF GLIOMA.

The patient was a child $3\frac{1}{2}$ years of age. The growth was removed, but has since involved the submaxillary glands and the glands in the neighborhood of the ear.

DR. DAVID WEBSTER, of New York: There is now on record a case in which Dr. C. R. Agnew removed both eyes of a child 1 year of age for glioma. This was fifteen years ago and the individual is still living. In this case the diagnosis was verified by microscopical examination. In some cases where the diagnosis was made and enucleation refused the patients are still alive and the disease has not progressed, retrograde metamorphosis having, it is said, taken place.

THE PRESIDENT, DR. W. F. NORRIS: My impression is that in true glioma, retrogressive metamorphosis does not take place. Fatty degeneration may occur in parts of the growth, but I am not aware of a case in which the growth entirely disappeared. Such cases are, I think, instances of mistaken diagnoses. The diagnosis is difficult unless the growth has reached such a size that the vessels may be seen in it.

DR. SWAN M. BURNETT, showed

MODELS EXHIBITING REFRACTION BY CYLINDERS.

It was shown how the refraction and focal line change with the variation in the strength of the lens and with the alterations of the angle of crossing of their axes.

DR. B. ALEX. RANDALL, of Philadelphia, exhibited some drawings showing *Anomalous Outgrowths upon the Optic Disk*, and also drawings of *Anomalies of the Retinal Vessels*.

DR. EDWARD JACKSON proposed a
DESIGNATION OF PRISMS BY THEIR REFRACTIVE
POWER.

The author pointed out the inconveniences and

errors arising under the present method of designating the strength of prisms and recommended their designation by their refractive power as much more accurate.

A committee, consisting of Dr. H. D. Noyes, Dr. Edward Jackson and Dr. Swan M. Burnett, was appointed to take the matter into consideration and report at the next meeting.

DR. DAVID WEBSTER, of New York, reported a case of

EXTRACTION OF A PARTIALLY ABSORBED CALCAREOUS LENS.

March 15, 1888, C. C., æt. 23, consulted Dr. Agnew and the author at the Manhattan Eye and Ear Hospital. She had phthisis bulbi, left, and in the right eye were the calcified remains of a motley absorbed lens, with a discolored atrophic looking iris attached to the membranous mass by numerous adhesions. Visual field good. V. = fingers at two feet. The vision of left eye had been lost through a blow with a whip at the age of 2 years. A catarrh developed in the right eye some time afterwards. Seven years ago (1881), her sight having been lost four months, both eyes were operated on, by a surgeon in another city, several times. Violent inflammation followed one or more operations on each of the eyes. Eighteen months ago another needling was done by another surgeon, by which sight was somewhat improved. The atrophic eye of late has been painful and tender on pressure.

March 16.—Dr. Agnew enucleated the atrophic eye-ball. A calcific plate was found in the choroid and a small calcareous lens. While the patient was still under ether, he did an iridectomy on the right eye.

April 27.—Dr. Webster divided with Knapp's knife-needle two or three of the adhesions which were on the stretch. At least one could be heard to snap when cut. An attempt to penetrate the thinnest looking portion of the membranous mass failed. There was considerable effusion of blood which was soon absorbed.

May 14.—An attempt to remove the papillary obstruction with a sharp hook failed. Very little reaction.

June 6.—With a keratome bent on the flat, a wound was made as for iridectomy on the superior nasal corneal border. The papillary obstruction was drawn out and cut off close to the cornea. Not a drop of vitreous escaped. There was some pain in the eye for three or four hours, probably the reaction from cocaine. Four days later pain again appeared and was relieved by iced cloths.

June 18.—Fundus normal. No floating bodies in the vitreous, but the remaining portion of the papillary membrane which, by the way, was very thick, and so tough that the iris scissors would scarcely cut it, extends backwards horizontally and flops up and down with the movements of the eye.

June 22.—V. = $\frac{20}{80}$ with $-\frac{1}{2}$. Reads Jaeger No. 1 with $\frac{1}{25} + \frac{1}{25}$.

June 26.—Discharged, wearing the above spectacles.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. Wm. F. Norris, Philadelphia.

Vice-President—Dr. Hasket Derby, Boston.

Corresponding Secretary—Dr. J. S. Prout, Brooklyn.

Recording Secretary—Dr. Samuel B. St. John, Hartford.

It was decided to hold a special meeting for the consideration of scientific matters only, Sept. 19, 1888, at the Arlington Hotel, Washington, D. C.

The regular meeting will be held the third Wednesday in July, 1889, at the Pequot House, New London, Conn.

Adjourned.

Philadelphia County Medical Society.

Stated Meeting, May, 23, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. JOSEPH O'DWYER, of New York, read a paper on the use of

INTUBATION TUBES.

[Before reading his paper Dr. O'Dwyer exhibited tubes with a metallic attachment to replace the epiglottis in swallowing, one of them being so arranged with a spring that the finger might be introduced behind it as extractor. In order to illustrate through how small a space breathing can occur, he exhibited a specimen from a case in which there had been no choking of voice or other sign of laryngeal involvement. Many fear that the tube will slip through into the trachea. A tube was exhibited *in situ*, in a 3-year old larynx, showing that this accident cannot occur if the proper size of tube for the age be employed.]

The testimony of tracheotomists from the time of Bretonneau, has been uniformly in favor of canulas of large calibre. I will refer to a few of the authorities on this subject before giving the reasons that led to the adoption of laryngeal tubes of so much smaller calibre than those generally used in the trachea.

If a large opening be preferable in one situation it certainly is in the other, the same arguments applying to both. Bretonneau for some reason that I have not been able to find, came to the conclusion that the canulas which he first devised were not large enough, and laid down as a rule that: "The artificial conduit should in all ways have at least the normal diameter of the

glottis of the subject." Trousseau endorsed this as an excellent precept, which should never be forgotten. Steiner says that as large a canula as possible should be used.

The first point of importance insisted on by West, as influencing the result of tracheotomy in croup, is the use of a large canula. The author of the article on croup in Holmes's *System of Surgery* says that:

"As a general rule, both openings in the canula should be sufficiently large to admit as much air as would pass through the rima glottidis in health.

The following is from Reynolds's *System of Medicine*: "No tube with less than a quarter of an inch in diameter is sufficient to carry on respiration. At a year old such a tube cannot be introduced into the trachea; it would not be tolerated at 2 years old, so that at these ages some other means must be looked for to secure a passage for the air." This author then discusses the question as to whether the want of success with tracheotomy in very young children is not due to the inability to secure a large enough opening.

In answer to such assertions as the above, it is only necessary to state that the diameter of the lumen of the trachea at a year old is scarcely a quarter of an inch, and, furthermore, an adult can breathe comfortably while at rest through an opening of this size. I have at present a man under my care who has been wearing a canula in the trachea for the last seven months, the bore of the inner tube being exactly one-fourth of an inch in diameter. During part of this time he was obliged to breathe exclusively through the artificial opening, but then the least exertion, such as walking across the room, was sufficient to induce dyspnoea. Nature supplied this patient, who is of large stature, with a breathing tube at least seven-eighths of an inch in diameter, and the surgeon substituted one having a breathing capacity of something less than one-twelfth of this. In other words, the area of a cylinder seven-eighths of an inch in diameter is a little more than twelve times that of one a quarter of an inch in diameter.

I have found that in the adult the diameter of the lower division of the larynx is from one-eighth to three-sixteenths of an inch less than that of the trachea, which reduces the breathing capacity about one-third. I have not made any similar measurements in children, but by comparing a section from the cricoid cartilage placed beside one from the trachea, it does not appear that the area of the former is more than one-half that of the latter; in other words, the disparity is greater in children than in adults. In the preceding calculations I estimated on the size of the trachea, simply because it was more convenient, but it is evident that in order to arrive at correct conclusions, we must compare the lumen of the

canula with that of the infraglottic division of the larynx, because the trachea would conduct air to and from the lungs just as well were it no larger than its mouth. But, as I have already stated, it was not from any such comparisons with the normal calibre of the larynx that the tubes have reached their present dimensions, but from noting the results of pressure on the intensely inflamed and infiltrated tissues as found post-mortem.

After an experience with tubes of various sizes in over two hundred cases of croup, besides other forms of stenosis in children, I am fully convinced that, as at present constructed, they afford ample room for carrying on the respiratory function in the most perfect manner. When the disease is confined to the larynx and upper portion of the trachea, it is not an uncommon experience after the paroxysm of coughing that immediately succeeds intubation has subsided, to find the little patient breathing so quietly and imperceptibly that it is sometimes difficult to convince the mother, who has returned to the room after an absence of fifteen or twenty minutes, that her child is still living. Such complete freedom of respiration would be impossible were the opening too small. When the struggle for breath has continued long enough to produce extreme exhaustion, together with more or less atelectasis and congestion of the lungs, this perfect relief does not occur. The same is true after the partial asphyxia induced by prolonged or repeated attempts to insert the tube. Such cases sometimes never rally, although air enters the lungs in the freest possible manner. If any dyspnoea whatever remain for any considerable time after intubation, or if the respiration be much above the normal in frequency, it indicates the presence of some complication or extension of the disease below the tube. The fact that several times on removing a tube from the larynx I have found its calibre considerably reduced by firmly adherent secretions, when there had been no dyspnoea to indicate it, is good evidence that there is more room than is actually required for the free entrance and exit of air.

Physiology teaches us that the muscular system is the great consumer of oxygen, and that when this system is at rest the consumption of oxygen is reduced to a minimum. It has been estimated that as much oxygen is consumed during one hour of active exercise as would suffice for four hours in a state of repose, with food, and for six hours without food. On purely physiological grounds, therefore, if only one-fourth or one-sixth of the amount of air is required in a state of rest, a canula bearing this proportion to the normal lumen of the air passages should afford ample room for the perfect performance of the respiratory function without the least effort whatever. There would be no point in trying to determine through

just how small a fraction of the normal lumen of the air-passages it is possible to carry on respiration effectually, if the only object to be accomplished by the artificial channel were to allow the free passage of air to and from the lungs. There would then be no room for argument, as there could be no objection to having the canula many times larger than necessary for this purpose, for such exists in the normal condition. I will add further, that were there no abnormal secretions to be gotten rid of, there would still be no reason for difference of opinion on this question.

The only ground left for argument, therefore, is the manner in which the machinery concerned in the removal of secretions is modified or injured by a canula in the larynx or trachea.

The mechanism of coughing, as I understand it, is simply getting as much air into the lungs as possible, condensing it, and allowing it to escape suddenly, on the same principle as the air-gun. To accomplish this, the glottis is firmly closed, coincidently with spasmodic contraction of the expiratory muscles, until the imprisoned air is sufficiently compressed, not only to give it power to project any offending substance before it like the ball from an air-gun, but also to increase the friction between it and the lining membrane of the air-passages to such a degree as to scrape off, so to speak, secretions that may be adherent. Considerable condensation, with great velocity of the expired air are, therefore, necessary to give the maximum expulsive power. The latter without the former would accomplish nothing, because the same volume of air can be driven through the open or half-open glottis just as rapidly as in the act of coughing, without the least power to remove a particle of mucus even from the larynx, much less from the bronchial tubes. This can be demonstrated by trying to cough while retaining the vocal cords in the expiratory position—the lack of power resulting solely from inability to compress the air to any appreciable extent.

Coughing through a canula is identical with this act when performed with a partially open glottis, and the only means left of subjecting the air to any condensation whatever is the much shorter time occupied in expelling it through the same space by which it more slowly entered. An excellent and forcible illustration of this argument, and one the mechanism of which is identical with that of coughing, is the familiar act of blowing the nose. There is little or no ability to remove secretions from this organ without first reducing the nostrils to a small fraction of their normal calibre, or by momentarily producing complete occlusion, as in closing the glottis, until the air is sufficiently condensed to force the secretions out with it. Very little power can be developed even by closing one nostril and forcing all the air through the other, if normally patu-

lous. If secretions can be removed more effectually from the air-passages through a canula of the dimensions advocated by the authorities already quoted, for the same reason it should be easier to remove accumulations from the nose without compressing the nostrils. I claim, therefore, that while the artificial opening must be large enough for the perfect performance of the respiratory function, the power to expectorate is still further diminished, and in exact proportion to its increase beyond this limit.

DR. CARL SEILER: I see that Dr. O'Dwyer has added an artificial epiglottis to the tube. It has been the experience of all laryngologists to meet with cases of complete or almost complete destruction of the epiglottis by syphilitic or other ulceration, in which there has been no difficulty of deglutition at all. Therefore, I long ago came to the conclusion that it is not the epiglottis which protects the larynx, but the apposition of the ventricular bands. And I would suggest, though I have no experience with such a device, that if the tubes were so made that the head could slip into the ventricles of Morgagni without interfering with the ventricular bands, there would be no difficulty in deglutition experienced. It is not only in New York, but also in this city that the only operation for opening up the air passages that parents will consent to is intubation. I recall a very distressing case in an asylum, in which the matron would not consent to tracheotomy until the mother of the child had been communicated with, and while they were hunting the mother the child choked to death. This was before we knew of intubation. That we might have performed at once.

DR. H. R. WHARTON: As to the calibre of the tubes, the fact that children do breathe well with tubes as now made is sufficient evidence of the correctness of Dr. O'Dwyer's position. Since my experience of this, I am not so anxious as formerly to get in the largest tracheotomy tubes.

DR. E. E. MONTGOMERY: Since August, 1886, I have performed some thirty or forty intubations, having previously done some twenty-eight tracheotomies. Fifty per cent. of the children intubated have recovered. My experience is that this operation largely reduces the necessity for tracheotomy, and I believe that if intubation were done early in every case, tracheotomy would rarely be necessary. I cannot refrain from saying that I feel that in devising and perfecting his operation Dr. O'Dwyer has been a benefactor to the medical profession and to the human race.

DR. SHIMWELL: I have performed intubation sixteen times with seven recoveries. In all these has been immediate relief to respiration. In one case I had to remove the tube twice, and intubate it three times, and perform artificial respiration. In removing the tube post-mortem, I found it impossible to drag it down through the trachea, so there is no danger of slipping. Is it

the occurrence of substernal respiration-depression rather too late an indication to wait for?

THE PRESIDENT: I am glad to thank Dr. O'Dwyer for his lucid exposition founded on fact, and proved by actual exhibition of specimens, that the small calibre of his intubation tube is amply sufficient for due respiration. My own experience with tracheotomy has led me to favor large tubes, the largest that can be introduced without touching the walls of the trachea. I still believe that I have seen life saved by taking out small tubes and substituting larger ones. And I confess that the small calibre of the tube used was one of the theoretical considerations which I enumerated among the drawbacks to intubation. But facts are stronger than theories, and as the small calibre intubation tube does seem to give air enough, and as enough is all that is wanted, I am quite ready to profess my satisfaction with its present calibre. I must ask Dr. O'Dwyer to make clear to us the question as to the impaction of membrane. This is not a mere theoretical objection, but is borne out by experience. Perhaps I have been led to attach an undue importance to the matter by an accident which occurred to me a year or so before Dr. O'Dwyer read his now historical paper before the International Medical Congress at London in 1881. I had been called to a case of membranous laryngitis, and had proposed tracheotomy, which had been declined. As I turned to leave the room the mother called piteously, "Oh, doctor, don't leave my child without trying to do something for it." I said to my assistant, "We will try to save this child," and taking a catheter I cut off the end, and passed the instrument into the larynx. The child instantly became black in the face, and there was nothing for it but, without asking any questions, to plunge my knife into the trachea as the child lay on its mother's lap. I inserted the same catheter through the orifice deep into the trachea, and then we performed artificial respiration, my assistant inflating the child's lungs through the tube with his own breath, and my hands exercising compression of the thorax in respiratory rhythm; and, after a while, we had the satisfaction of leaving the rescued child sleeping peacefully with unobstructed respiration. But I confess that this experience cost me some of the most anxious moments of my life, and has left a fear of the danger of crowding down membrane in front of a tube introduced into the larynx which may, perhaps, make me over-anxious.

DR. O'DWYER: Pushing down of membrane does occur, though rarely. The difference between the liability to the accident in catheterization and intubation is that the catheter has an open, comparatively broad end, while the intubation tubes are comparatively probe-pointed. One pushes and catches the membrane, the other slides past it. I have crowded membrane down in only two cases

out of two hundred sufficiently to produce asphyxia. In those two, on removal of the tube, the cast was coughed out.

If we take away the tube because the child is breathing badly and the trachea is full of membrane, the child not having the strength to cough it out, the child chokes from the absence of the tube, not from its previous presence. My attention is now being directed to devising a means to get rid of the membrane. I hope to present something practical before long.

Blocking with membrane while the tube is in may occur. Formerly, when the swell of the tube was not so great, it would be coughed out, but now it is not coughed out and suffocation may take place. The original tube was better in this regard.

The earlier tubes were made to fit into the ventricles with the idea of permitting the approximation of the ventricular bands, but it did not work. It is true that the epiglottis is merely an accessory, but in an intubation case, the ventricular bands being held open, we have to depend upon it; and that is the reason, the dependence being a poor one, that solids and semi-solids which can go down in mass are better than liquids.

DOMESTIC CORRESPONDENCE.

A Few Drops at a Dose.

Dear Sir:—Your editorial headed "About the Size of a Bean," in THE JOURNAL for May 26, is very timely and to the point.

Manufacturers of patent and proprietary remedies, as well as the druggists, are also guilty of using very indefinite directions for the administration and preparation of medicines. The label for one of the popular cough preparations states that the dose is a "few drops." Now who knows how many make a few? If the patient has just been taking tincture of iron in five-drop doses then two or three would be considered a "few," but if some mixture has been previously administered in forty or fifty-drop doses a "few" might be construed to mean twenty or thirty drops. Another manufacturer of remedies for the cure of all human ills instructs his patrons to take a teaspoonful "several times a day." Previous experience may cause one person to consider three to be "several" while others may take twenty doses a day. These cases of carelessness on the part of manufacturers might be multiplied, but they are sufficient to illustrate the point. Practicing physicians should bear this state of affairs in mind when called to see patients that make a drug store of their stomach.

The retail druggist is also sometimes guilty of giving careless directions. Customers sometimes

ask for information about doses, or how to prepare decoctions, infusions, poultices, etc. I have heard such indefinite measures as a "handful," "pinch," "a little," "swallow," "gulp," "sip," "mouthful," "bowlful," "small quantity," etc., used in imparting such knowledge. Our drops, teaspoons, dessert-spoons, table-spoons, teacups, tumblers, wine-glasses, etc., vary sufficiently to cause trouble without making use of such vague terms as I have mentioned.

H. M. WHELPLEY.

St. Louis, Mo.

Tympanitis and Tympanites.

Dear Sir:—Your late reference to the frequent use of the word tympanitis for tympanites, suggested a few reflections on the subject of careless expressions by medical writers. It seems to me, however, that you have been unfortunate in the one example which you have selected for animadversion. Whenever I have seen one of the spellings in question, where the other ought to have been used, I have regarded it as a typographical error which had escaped the proof-reader. But suppose, for example, the misspelling to have been in the copy, should not the compositor have corrected it? If, however, he failed to do so, was it not the duty of your proof-reader to preserve THE JOURNAL from such a blemish? Some pretty well educated doctors are careless writers. Is it customary for the better journals to reproduce all their accidental faults?

If 'twere possible always to regard the error as a fault of the printer I would not trouble you with this note. How often do we see the terms vaccinate and inoculate used as if they were synonymous. In records of cases we meet every day with the expression "the pain disappeared." Of course it is too much to expect of the publisher that he should correct all the defects of a radically bad composition, but when, as in the instance to which you refer, it is the use of an *i* instead of an *e*, the profession will hold him responsible.

Sincerely,

[We selected the misuse of tympanitis for tympanites for animadversion because it is frequent, both in authors' mss. and in medical literature, and because in one case after the correction had been made the author changed it in his corrected proof. It is the editor's, not the compositor's or proof-reader's, duty to correct misspelling of technical words, and this should be done before the mss. is given to the compositor.

Medical men are very jealous of having their mss. corrected or changed in any way, and frequently complain of changes, even when they are made in the interests of grammar and common sense.

What is the objection to the expression, "the pain disappeared?" One of the meanings of "to disappear" is "to cease to be or to exist."

While on this subject, we beg to call our correspondent's attention to some words and expressions in his communication. "... in the one example which you have selected," should read "in the one example that you have selected," if a relative word be used at all. "... where the other ought to have been used," should read "where the other should have been used." *Ought* implies *moral* obligation.—EDITOR.]

MISCELLANEOUS.

TEACHING IN THE LONDON HOSPITALS.—Dr. George J. Preston, of Baltimore, writes to the *Maryland Medical Journal*: The Continental schools have held out so many and varied attractions to the student of medicine, and the prevailing fashion has set so steadily in that direction, that comparatively few Americans are found in the hospitals of London. This is to be regretted for several reasons, the most important being, that we in America are in need of the painstaking, thorough, clinical work that is so characteristic here. Then, too, no time is lost in becoming accustomed to a foreign language, as on the Continent. Of course there are disadvantages. There are very few private classes or courses given here, and the foreign student is not given the prominence that is awarded him in Vienna, for example. The teaching is intended, as it should be, for the English student. I have heard of some complaints from German students, that more attention is shown to foreigners in many of their Universities, than to their own men. On the other hand nothing could exceed the courtesy that is extended to a visitor in the London Hospitals. Everything is open to him, and he is free to attend any clinic or lecture he wishes to avail himself of. The thing that impresses one most in regard to the work here, is the minuteness with which the clinical examinations are made. The teaching is done not by lectures, or, at least, very little in this way, but in the wards. The students are taught to take the histories of the cases, and the chief carefully goes over each case, pointing out characteristics and peculiarities, and directing the examinations which each student makes for himself. My attention has been directed chiefly to neurology, for which London offers special advantages, both in the amount of material and the eminent specialists. At the National Hospital for Paralysis and Epilepsy, there are from 250 to 300 beds, and very large out-patient departments. It is the centre for this special work, and is admirably fitted to carry it on. Dr. Gowers, whose recent book is in most respects the best systematic work on nervous diseases that has appeared, holds a very large out-patient clinic every Monday at the National, and his well-earned reputation has attracted students of nearly all nationalities to him. This clinic lasts from two to three hours, in the course of which almost the whole field of neurology is illustrated. The work is mostly diagnostic and physiological; treatment has not a very prominent place, except an outline of it, nor is pathology made as much of as in many of the clinics in America. This fact has impressed me also in the clinics in general medicine. One does not hear very much about pathology, except in the lecture on that special subject, or in the dead house. The clinical teaching is essentially diagnostic.

ORIGINAL WORK AT THE THOMAS WILSON SANITARIUM.—The noble work of this Institution among the children of the poor has been resumed during the present summer with renewed vigor. As many as ninety children, most of them ill with summer complaints, are taken early each morning, free of charge, to the

tarium, and brought back to the city late in the afternoon. At the Sanitarium simple food is provided freely for all, and the mothers and children spend the day in its pleasant halls and grounds. Those who go for the day, only, take with them their own medicines, and special caution is used that the directions of their family physicians shall not, except in emergency, be interfered with.

The subject of greatest interest is the treatment of those children who are allowed to remain for several days or weeks in the cottages, under the care of the physician in charge, Dr. Booker, and of the resident lady physicians. Two of these cottages contain twelve rooms, each with a bed and a cot, for mothers who can remain with their children; the third has a nursery of eight cots, in which children may be left, in charge of two competent nurses, by mothers who must go to the city, and who are furnished with tickets so that they may return to the sanitarium whenever they wish. Severe cases of summer complaint are benefited only by several days stay in the country. The treatment of the cottage children is very simple and worthy of adoption in private practice. In acute diarrhoea with vomiting of milk, the child is at once taken from the breast or bottle, and no food except beef tea is given to it for twenty-four hours. Small doses of calomel—1-12 to 1-6 grain—are administered hourly for a day or two, to quiet the stomach and to excite the secretion of the liver. At the end of twenty-four hours *sterilized milk* is given. If the vomiting returns the milk is stopped and beef tea is resumed for twenty-four hours, when milk is once more given.

No artificial foods are used in the Sanitarium. Irrigation of the lower bowel is practiced two or three times a day, if it does good. In chronic cases resorcin grs. ij with tr. opii deodorata gtt. ½ is given every two or four hours. When vomiting proceeds from nervousness, sodii bromidi grs. ij and chloral hydrate gr. j are administered every two or four hours to a child of six months. This same prescription is used for sleeplessness. As a rule no further medication is needed.

Dr. Booker considers the *sterilization of the milk* a great improvement, likely to do away with wet-nursing and artificial foods. Milk as it flows from the breast is free from microscopic germs. Between the time when the cow's milk leaves the rubber and the time when the baby drinks it various minute organisms may fall into it, which, either before or after the child takes it, produce changes in the milk which cause disorder of the digestive organs of the child.

By *sterilization* we either destroy these organisms or check their growth. The apparatus for sterilization is a covered tin bucket ten inches in height by eight in diameter and a wire basket made by Dufur & Co., of Baltimore, large enough to hold six or eight nursing bottles. In the bucket filled to the depth of one inch with hydrant water, is placed the wire basket with the nursing bottles, each of them containing a suitable amount of milk and stopped with a wad of cotton batting. The bucket is then covered and placed on a gas stove, and the water is boiled for half an hour, the milk, bottles and stoppers becoming sterilized by the heat. After cooling the basket of bottles is kept in a cool place, and one by one, as needed, the bottles are removed, the stoppers taken out, and a disinfected nipple is attached for nursing. Milk enough to supply one baby for twelve hours is thus prepared at once, and if kept in a cool place—even without ice—it will remain sweet and wholesome until used. The whole apparatus, including bottles, costs a little more than a dollar.

It is stated by Dr. Booker that when the infant's bowels have once been cleared of ill-digested milk by change to beef tea and by irrigation, the use of sterilized cow's milk properly diluted is followed immediately by great improvement in the health of the infant, as great as when it returns to the breast of its mother.

For irrigation of the bowels a fountain syringe full of tepid hydrant water is connected with a soft rubber

catheter about fourteen inches long, and this catheter, oiled, is passed gently to its full length into the rectum and descending colon, the water—a gallon or more—being allowed to follow into the bowel and out again by the side of the catheter. This irrigation is painless and often aids greatly in recovery, especially in severe cases resembling cholera infantum.—*Maryland Medical Journal*, July 14, 1888.

THE METHOD OF DISINFECTION PRACTICED AT THE QUARANTINE BELOW NEW ORLEANS.—No scientific report published by the Government this year has been more important than that just made by Dr. J. J. Kinyown, assistant surgeon in the Marine Hospital Service (*Weekly Abstract*, June 29), upon the germicidal powers of the different methods of disinfection practiced under the direction of the Louisiana Board of Health at the quarantine station below New Orleans. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans, but also, since the methods of disinfection practiced at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use.

The three methods of disinfection tested were: the use of bichloride of mercury solution, the application of dry and moist heat and fumigation with sulphur dioxide.

Dr. Kinyown finds the first of these methods defective, because of the difficulty of getting the disinfecting agent into cracks and corners, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the microorganisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the fore-castle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyown recommends that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by connection with a steam-boiler, and that it be applied after fumigation by sulphur.

The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of 176° F., and afterward to steam at a temperature of 212° F., were, with few exceptions, destroyed. Dr. Kinyown thinks that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased.

In eleven experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than 22 per cent. Dr. Kinyown has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in large quantities, and be confined in the compartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves.

The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practiced at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. We assume that the quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.—*Science*, July 13, 1888.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The Committee of Arrangements takes pleasure in announcing to the members and invited guests of the special societies taking part in the Congress that the arrangements are sufficiently advanced to assure the success of the First Triennial Session of the Congress of American

Physicians and Surgeons, which will be held in the city of Washington, during the 18th, 19th, and 20th of September next.

A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom may be named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Drs. W. O. Priestly, William Ord, and Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Annandale, Professors Ferrier, Esmarch, and Gerhardt, Drs. Rafael Lavista, of Mexico; J. L. Reverdin, of Geneva; O. W. Holmes and H. J. Bowditch, of Boston; Joseph Leidy, of Philadelphia; W. Kingston and Eccles, of Canada.

The meetings of the Congress will be held during the evenings, beginning at 8 o'clock, P.M.; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday evening) in the hall of the National Museum. During this evening the Army Medical Museum and Library building, along side of the Museum building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession.

On Monday evening, September 17, a dinner will be given by members of the Congress to the guests of participating societies. Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the Congress and invited guests. An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the Congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum building on Thursday night, after the final adjournment of the Congress.

Guests are requested to notify the Chairman immediately after their arrival in Washington, giving their address and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests. Hotel accommodations are ample, and conveniently located to the places of meeting.

The Secretaries of the special societies are requested to forward to the Chairman the names and addresses of their foreign guests.

Members of the Congress and the guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. All communications should be addressed to the Chairman of the Committee.

SAMUEL C. BUSEY, M.D.

Chairman Committee of Arrangements.
1545 I St. N. W., Washington City.

RECORD AND CLASSIFICATION OF CONTINUED AND REMITTENT FEVERS.—*To Medical Officers and Acting Assistant Surgeons, U. S. Marine Hospital Service.*—With a view of formulating a more precise symptomatology of the "continued" and "remittent" fevers; from and after July 1, 1888, you are directed to take full and accurate notes of all cases of "continued" and "remittent" fevers treated by you among patients of the Marine Hospital Service, and to make special semi-annual reports of all such cases to this office.

The cases of fever should be classified, as far as practicable, according to the symptoms in each case, into simple continued, enteric, remittent, etc., and every symptom noted.

The presence or absence of the following symptoms relative to enteric fever should be carefully noted, together with the dates of their respective appearance:

Eruption; Diarrhœa; Tympanites; Intestinal Hæmorrhage; Perforation of Intestines; Peritonitis; Necropsy; Temperature Range; Enlargement of Spleen; Delirium (character); Mode of Onset (gradual or sudden); Presence or Absence of Initial Chill; Presence or Absence of Intestinal Lesions, and, if present, give exact location.

JOHN B. HAMILTON, *Supervising Surgeon-General.*

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 27, 1888, to August 3, 1888.

Surgeon D. L. Magruder, U. S. Army, is granted one month's leave of absence, to take effect on or about August 13, 1888. Par. 11, S. O. 171, A. G. O., July 25, 1888.

Major Richard S. Vickery, Surgeon U. S. Army, leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

Surgeon Robert H. White, U. S. Army, is relieved from duty with battalion First Infantry at Santa Barbara, Cal., and will proceed to Angel Island, Cal., on public business, on the completion of which he will stand relieved from duty in this department. Par. 4, S. O. 43, Hdqrs. Dept. of Cal., July 17, 1888.

Asst. Surgeon Curtis E. Munn, U. S. Army, will proceed to Santa Barbara, Cal., and report to commanding officer of the First Battalion of Infantry for duty. Par. 3, S. O. 43, Hdqrs. Dept. of Cal., July 17, 1888.

Asst. Surgeon John J. Cochran, U. S. Army, will proceed to Benicia Bks., Cal., on public duty, on completion of which he will return to these Hdqrs. Par. 1, S. O. 41, Hdqrs. Dept. of Cal., San Francisco, Cal., July 20, 1888.

Asst. Surgeon Reuben L. Robertson, U. S. Army, is relieved from duty at Ft. Keogh, Mont. Ter., and will report to the commanding officer at Ft. Buford, Dak., for duty at that post, and by letter to the commanding general, Dept. of Dak. S. O. 161 A. G. O., July 20, 1888.

Asst. Surgeon N. S. Jarvis, U. S. Army, is granted one month's leave of absence, on surgeon's certificate of disability, with permission to go beyond the limits of the Department. Par. 1, S. O. 90, Hdqrs. Dept. of the Missouri.

Capt. Henry Johnson, Medical Storekeeper, U. S. Army, leave of absence granted for one month and fourteen days, from August 1, 1888. S. O. 170, Hdqrs. of the Army, A. G. O., July 24, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 28, 1888.

Surgeon Thomas N. Penrose, detached from Navy Yard, Boston.

Surgeon J. B. Parker, ordered to the Navy Yard, Boston. Albert McD. McCormick, commissioned Asst. Surgeon in the Navy.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending July 28, 1888.

Surgeon R. D. Murray, to proceed to Manatee, Fla., on special duty. July 21, 1888.

P. A. Surgeon Eugene Wasdin, to proceed to Key West, Fla., for temporary duty. July 21, 1888.

Asst. Surgeon J. B. Fattie, to proceed to Memphis, Tenn., for temporary duty. July 28, 1888.

Asst. Surgeon R. M. Woodward, when relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

Asst. Surgeon H. T. Goodwin, when relieved, to proceed to Cincinnati, O., for duty. July 24, 1888.

Asst. Surgeon G. M. Guitéras, appointed an Asst. Surgeon July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La. July 24, 1888.

Asst. Surgeon S. H. Hussey, appointed an Asst. Surgeon July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md., July 24, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 11, 1888.

No. 6.

ADDRESS IN GYNECOLOGY.

HOW GYNECOLOGY IS TAUGHT.

Being the Address of the Chairman of the Section on Obstetrics at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888

BY ELY VAN DE WARKER, M.D.,
OF SYRACUSE, N. Y.

The Victorian period furnishes no more marked example of the evolution of a great science and a technical art, than the growth of gynecology during a single generation. The Imperial Dictionary says that gynecology is the doctrine of the nature and diseases of women. Brief as is this definition it includes a field too extensive with too many elements of medical and surgical complexity to be defined as a specialty. Every province of Medicine is placed under tribute. Ethics, dialectics, casuistry and sociology contribute to the solution of mental, moral, social, and physical problems in a field where priest and logician claim an equal right with the medical man. The depths to which gynecic surgery may penetrate have not yet been sounded, while operations so desperate that the surgeon is sustained only by his training and the courage of his convictions, are simple matters of routine. Surely this cannot be called a specialty. I would define it as general medicine and surgery brought as near perfection as the age permits; and gives direction by certain mental qualities in the medical man himself.

This brings us to speak of the man and the large element of personal equation that shapes him for his work and in the direction of which he has a certain natural drift, for which he is fitted only by gradually maturing in his calling. How else can he be prepared with the large measure of sympathy and the boundless patience that he must expend in the routine of his daily life; how else can he make himself at one with a moral nature that stands in the order of vital events at the opposite pole of spiritual life to his own? He must be possessed of some innate qualities of truth and consistency in order to deal with a being specially created by God to understand and interpret him. His inner life must be free from guile, and his outer life lived cleanly, that he may gain the confidence of one to whom all good-

ness, and beauty and truth are sexual traits of mind. He must have a sturdy and manly moral nature that will give repose to those about him, that can lead at all times, and that can govern when he must.

Such is, I believe, the thing called gynecology, and measurably approaching this standard must be the gynecologist. When we take into consideration the fact that this is the growth of but a single generation, the conclusion that gynecology has outgrown the system of medical education as it exists to-day is evident, and further, that it is not the outcome of any existing method of medical training, but the product of the period, and has simply kept pace with the march of events in the intellectual evolution of the age. We can account for the gynecologist in no other way. No college has educated him, no polyclinic has turned out the finished product, but the history of civilization has shown that surely out of human needs has grown the supply of every want. Heretofore he has been an accident, but the necessity having created him, the supply can no longer be left to chance, he must be educated to meet the want.

Here we touch the real difficulty of the question. Has medical education in any existing system perfected itself to meet the needs of the civilization of which it is a part? We may say of any of the special sciences, outside of medicine, that in some centre of learning each may be followed to the ultimate borders of its progress, and what is of equal value, one may there cross the borders, and add to the material facts of his chosen field, but leaving out the pure sciences as they exist in their special forms, we find the applied sciences taught to meet the demand that called them into existence. Steam has created the mechanical engineer, and has perfected schools to educate him. Electricity has produced the electrical engineer and technical schools are able to turn out the finished expert. Scientific warfare has created special schools where the most advanced forms can be practically taught. The same thoroughness of technical education applied to medicine seems to carry the student away from its simple practice to that of the secluded laboratory, or in the direction of the great specialty of the future,—State Medicine, as we

can already see it in the government laboratories of Europe. Each step in advance as it has assumed a form made necessary by the demand of social evolution has enlarged the bounds of practical education, that of the work-shop, the laboratory and the instrument of precision. There is not an exception to this law anywhere in the line of march of material progress.

This is not a national matter, but is cosmopolitan in its breadth; but as America is the country in which the most finished forms of the gynecologist has been produced let us turn to our own standard of medical education, and to our best methods as they exist to-day, and question what are the chances of meeting the requirements of the future? You must remember, that I and my contemporaries in the profession passed through our medical training with scarcely a suspicion that such a thing as gynecology existed. The teacher to whom we looked for instruction in this department held the chair of Obstetrics and the Diseases of Women and Children, and he was expected to do all of this in the short space of sixteen weeks. Why the function of this one man was limited by subjects that he never taught, and that it was impossible for him to teach, was one of the mysteries of the system. Such was the fact, not only in my college, but all over the land, and what is yet more to the point, in not a few instances, it is a fact to-day.

I have been able, by means of some publications of the Illinois State Board of Health, to examine into the teaching methods of our medical colleges. And here let me say, that I know there are a number of distinguished teachers before me, and no one will more willingly accord to them than I the merit that they have so honorably won. It must be understood, then, that I say without disrespect, but also without fear, that the medical teaching of to-day does not as perfectly reflect the actual state of medicine, or as completely meet its needs, as that of twenty-five or thirty years ago. At the time of which I speak, gynecology was obstetrics. There was no separating them, and, indeed, no need; for all that was known of gynecology was practiced through a narrow tube called a speculum, and its surgery varied from the potassa fusa of Simpson to the antiphlogistic touches of Meigs. Now let us see how this important subject, that involves so large a part of the life-work of every medical man, is disposed of in American medical schools. I have selected only those that are accepted by the Illinois Board of Health; nor have I drawn the line at medical sectarianism, for every woman, no matter what may be the particular "pathy" of her medical attendant, has a right to expect that her sexual ills are safe in his hands. I have here a list of 109 medical colleges, so-called, and 56 of them have the diseases of women taught by the Professor of Obstetrics, and 14 of them still re-

taining under this head the diseases of children. There may be other means of teaching gynecic medicine, but if so no mention is made of the fact in the list of teachers. In 82 there are either professors, lecturers or instructors of gynecology, and as such are given a place in the faculty. In 10 no mention is made of the subject of women's diseases at all. That is, the professor of obstetrics is such only, and no mention is made of his occupying the double chair of the first group. So far as these schools give us any knowledge of their methods, the subject of gynecology has no place in their curriculum. One school that stands by itself in my tabulation mentions that 44 lectures are given upon gynecology. This part of my table gives us 66 colleges out of 109 in which the diseases of women is either taught by the Professor of Obstetrics, or is not taught at all.

This is the old method of work, and like the majority of things that are old has the merit of being respectable to say the least. According to my way of thinking worse remains to be told, worse in the sense that if the new method, the graded system, does not give us something better it implies failure and defeat, and thus the cause of medical education is set back another generation. Now I do not believe that any one will dispute me when I assert that the so-called graded system came from the practicing body of the profession and not from the teaching branch. I have watched and studied this change from its inception and think that I know something about it from the non-teaching side of the question. Years of agitation in this Association, in State and local societies were needed before any practical shape was given to reform, and even then nothing was gained from the teaching branch of the profession. Reform emanated directly from the practicing ranks. The change was not grafted upon an old school, but was given form in a new school with its faculty recruited from the rank and file. This was the college at Syracuse, and the graded method of study forms the sole basis of instruction. The establishment of this school marked the period that was ripe for reform. Fifteen years have passed since, and in this interval but thirteen colleges are organized upon a required basis of graded study. In all other instances it is recommended, but not *required*. The advocates of this reform can find no cause of offense if we stop to critically examine the measure of good that has been the outcome of the method.

And first, I may say for the great mass of the profession, that the new departure was well received. They were pleased to know that the growing demand for higher medical culture was met in a fair spirit, and while a few schools conformed to the demand, it was looked upon as a beginning reformation. Courage and faith in the real depth of the reform spirit in the mass of the profession was needed on the part of those who

embarked in the new system. The commercial enterprise of the majority of the schools was arrayed against it, and disaster was continually predicted for the new movement. So active was the reform spirit that several schools began their chartered existence with the graded system as a part of their organic law, and that without which would have had little reason to exist, but flourished in spite of, or by reason of, a state of nearly open warfare. These few words tell the history of the movement, for here the matter ended. The inertia of the commercial spirit rests upon it, and the old and new have struck hands in a sort of unholy alliance. Not to my knowledge has there been any addition to the ranks of the new schools. Among 109 institutions 13 have the graded plan of study as a required curriculum.

President Andrew D. White, before the Yale College Alumni, reviews in a most caustic address, the defects of our educational, social and intellectual life. All the deficiencies that an American of cosmopolitan culture would be ashamed of, he attributed to a broad undercurrent of retarding influence that he called mercantilism. He did not refer to American medical education as an instance of this overpowering trade spirit, but it asserts its presence as powerfully in the professional training school as in the academy or in the senate. Upon this theory we may explain what happened to the young and promising reform party. It found itself circumscribed as with a rampart by this mercantilism and barely held its place. It did not advance. It is to-day what it was in the beginning, and has become as indifferent to the progressive spirit of the age as the old order of things that it endeavored to replace. There was a fatal mistake made at the very beginning of the reform in regarding it as established, instead of being merely a trial of the new order of things upon its merits—an experiment capable of being extended and improved. At the time the change in medical education found a few practical adherents, educational methods were receiving great attention, and old ideas were giving place to new upon every side. The reform in medical teaching differed from that in other fields of education in moving at once to some radical changes, and then becoming as fixed in its new direction as it was in the old, while in the latter the subjects as well as the methods of education are debated as earnestly to-day as when the movement began. Matters are yet in a state of evolution, and step by step the questions are being solved. Another singular difference also exists, as I shall show. The new medical curriculum has taken up methods of teaching that advanced educationalists have abandoned: thus, while the text-book is becoming less an instrument of higher education, it has more or less usurped the place of the didactic lecture in the graded medical school. The result to my mind is serious, and is becoming evident in

the fact that reform medical education is taking up the very methods that progressive education is abandoning for demonstration and the didactic lecture. It is a total misconception of the purpose of a text-book to place it before the student as a substitute for the magnetic personality of the living teacher. Now a medical man may be defined as one trained to observe natural phenomena in a certain special field, and he must be trained to observe as accurately the phases of disease as the operation of that uncertain factor called a remedy. I assert, and no one who has been a thorough and original student will contradict me, that the text-book was never written and never so carefully studied, as would transform the untrained man into the accurate observer; but I will go further, and say that just in proportion as he masters his text-book will he narrow his mental horizon and blunt his observing faculties. If it is the purpose of medical education to simply fit a man to pass an examination, a series of memorized facts acquired under the drill of a simple coach—for to that function have many professors degenerated—is as good an education, if not even better, than any other, but while being thus educated the student has been exercising one of the lowest faculties of his intellect, leaving higher and more useful faculties untrained. The dangers of this method do not end here. I say flatly that the text-book cannot educate, but it has entered into branches from which it ought to have been excluded, if the object to be gained was education. For instance, Anatomy and Materia Medica in the new medical curriculum have by nearly common consent been surrendered to text-book teaching. What ought to be a series of object lectures, each fact being materialized and studied in its exact and natural relation, is reduced to a useless memorizing of a mass of disjointed facts that no amount of after training will place at the call of the man in after life when text-books are forgotten. What ought to be entirely laboratory work and lecture demonstration, is taught exclusively in the recitation room.

If you remonstrate with an advocate of this method he will point with pride to the high average of the man's term examination, as though technical education could be represented, like interest, at so much per cent. The teaching of anatomy was crude enough under the old method in the majority of the schools, but it is incomparably worse in those in which the text-book has gained the ascendant. It is extraordinary that small country schools that aspired to take a high rank as thorough teaching bodies did not see the advantage that would result to them of excluding the elementary sciences entirely from the recitation room and making them the subjects of laboratory work. So far for the student. But I believe that the effect upon the teacher is equally bad. A medical teacher, of all men given to that calling,

ought to be a man growing continually deeper in his knowledge, wider in his range of mental vision, and riper and more complete in his method of work. He reaches these progressive levels of development by study and experience in his real specialty, that of teaching. Conceive of the effect upon any ordinary man of sitting before a class of young men, with his book upon his knee, and hearing a mechanical recitation, while he industriously marks his men as they repeat more or less accurately the pages of the author than in the ascendant upon the subject-matter of the professor's topic. Can he develop? Will his character round out in the fullness of time into the perfect teacher who inspires enthusiasm, clarifies the understandings of his students, and contributes his share toward developing that most complete embodiment of the education of the age, the scientific observer?

What retards the growth of the graded system? why is it recommended instead of required in 96 out of 109 colleges? The reason is, I believe, mainly due to the fact that practical educators recognize the insuperable difficulties of joining a system of graded study to a three years course of the numerous subjects that enter into a medical education. In some schools anatomy consumes two years, the freshmen of the second year taking it up where the freshmen of the year before left it off. The same was true of physiology, and yet in this same year clinical medicine and surgery, with therapeutics, had of necessity to be taken up. I know of no school where the elementary sciences were cleanly finished up in the freshman year under the graded system. This is not the place, nor have I the time to give all the reasons necessary to prove my position that the old didactic three years course of study must be abandoned in favor of a four years course of study, in order to perfect a system of graded medical training. Nor has the demand of the profession been satisfied by this imperfect attempt at reform. The growth of the polyclinic, the development of which has been a phenomenal outgrowth of the attempted reform in medical education, is one of the best evidences that the working body of the profession is in search of something better in the way of technical training than is afforded by the medical college. Their existence as teaching bodies independent of the regular schools still further complicates the question, and will in the future add further difficulties in the way of the adjustment of the conflict that exists between the just demands of the body of the profession and what we are compelled to regard as the mercantilism of the schools.

Under this so-called graded system gynecology has fared more poorly than under the old method. In one school dermatology is given a full chair, while gynecology is in charge of an instructor, at the end of everything. Three of the schools have

the subject assigned to the second year, while the ten remaining have given it to the third year. It appears as much out of place in one as in the other, if we are to find a place for it among the following third year studies as advertised by one school, namely: Therapeutics, practice, surgery, clinics, obstetrics, pediatrics, gynecology, forensic medicine, ophthalmology, hygiene. This school gravely states in its advertisement that "steady growth and not distension is the result" of the graded system.

Now, under these circumstances, how is gynecology taught? It is simply not taught. The graduate leaves his alma mater with his mind like virgin soil so far as this great branch is concerned. In forming an estimate of what a medical college can do we must take into consideration our own personal bias. We of this Section insist that medical education should tend to make a student a safe and efficient obstetrician and gynecologist, while the ophthalmologist makes the same demand for his Section, and the neurologist for his. Now we must admit that it is not the purpose, nor is it possible, for medical schools to turn out the finished expert in the practical subdivisions. In this sense we must regard the school as a primary department in medicine. It sows the seed, and each one reaps a harvest according to his needs, or the quality of his manhood. If in all the special fields, in which a practical knowledge implies brain culture with manual training, the medical teacher will teach correctly, consuming the time, brief of necessity, that the student can devote to the branch, grounding him in practical education with sound *viva voce* object teaching, and not textbook recitation with a view to passing an examination, the man may be safely left to himself in the field of practice. Teach him to observe and how to examine, and knowledge and expertness will come to him. The man who travels through a strange country with a map and compass does not find depicted every declivity and vale and devious winding of his route. His map gives a series of suggestions, his compass points the way, the landscape is new and strange, yet with trained faculties of observation he safely pursues his way.

We are living to-day under a new dispensation in the matter of teaching gynecology, and that is the influence diffused among us by the women's hospitals. Starting from the germ planted by our great master Sims in the Woman's Hospital of the State of New York, scarce a city of the land but has its hospital, great or small, public or private, where some faithful master, surrounded by a little band of followers, works and teaches. Each becomes a nucleus from which radiate widely diverging influences, the result of which may be seen in nearly every hamlet of the land. But a few years have witnessed this influence at work among us, and but a few years bear the token of the new art itself, yet the numbers who have

ceived their inspiration and teaching from this source may be numbered by thousands. Those who were under the personal influence of Sims realize the full meaning of this. Being in touch with this man has sent a thrill of enthusiasm down far-reaching channels of medical life that has not yet ceased to vibrate. To us the man is a memory, in a few years he will become a tradition, and will pass into the history of a great people and of a beneficent art, while his influence over the thinking and doing of those who come after him in his beloved art is ever growing wider and deeper. Sims was a man of the working ranks. He was the apostle of the general practitioner, he leavened the mass, he diffused through it his superabundant individuality like a subtle essence. To his teaching, his example, and his enthusiasm we owe the position we occupy among the nations as gynecologists.

ORIGINAL ARTICLES.

LIVING AND DEAD OSTEOMAS OF THE NASAL AND ITS ACCESSORY CAVITIES.

ILLUSTRATED BY A CASE OF ENCYSTED ORBITAL OSTEOMA ORIGINATING IN THE ETHMOID BONE.

Read in the Section on Surgery at the Thirty-eighth Annual Meeting of the American Medical Association, May, 1887.

BY CHRISTIAN FENGER, M.D.,
CHICAGO, ILL.

Spencer Watson called attention in 1868,¹ to the fact that a peculiar form of exostosis not infrequently developed from the walls of the ethmoidal cells and the sinuses of the frontal and ethmoid bones. Frequently these osseous tumors developed into the orbit and encroached upon the eye, displacing and finally destroying it by pressure. It was the practical importance of the latter fact that directed especial attention to the so-called orbital osteomas. Cruveilhier had before this shown that osseous tumors were often encysted or surrounded by a peripheral layer of bone. Virchow pointed out that orbital osteomas often developed in the diploë of the surrounding bones expanding their cortical substance so as to be "encysted," by a layer of the latter, but at the same time he made the distinction between these enostoses and true exostoses originating in the periosteum of the walls of the orbit.

Arnold first called attention to the fact that orbital osteomas often had their primary seat in the surrounding sinuses, and from here later in their growth entered the orbit. The true relation of the encysted osteomas of the orbit, of Cruveilhier, to the nose and accessory cavities, was not

thoroughly revealed until 1881, when Bornhaupt,² in an excellent article describing an orbital osteoma originated in the frontal sinus and operated upon by Volkmann in Halle, gathered from the literature not less than fifty cases of these tumors. From Bornhaupt's exhaustive investigations on this subject, the most important points regarding the development, as well as the diagnosis, prognosis and treatment, hitherto unknown, have been brought forth; and we owe to him our present somewhat thorough knowledge of the subject, together with most valuable practical suggestions as to the rational method of operating for their removal.

Tillmans³ has lately called attention to the fact that similar osteomas develop also from the walls of the nasal cavity, and that the dead osteomas described by Dolbeau, lying loose in the frontal sinus, belong to the same class of osseous tumors.

My attention has been especially directed to this subject by the following case:

Morits Mayer, 24 years of age, tailor, was admitted to Cook County Hospital, April 27, 1887. He gives the following history: Parents lived to old age and there is no history of tumors or deformities in any of his ancestors or relatives. Patient had measles when a child, but otherwise has always been strong and healthy. He dates his present illness from 1878, when he was struck by a club at the inner canthus of the right eye, causing fracture of the bones of the nose. In the course of a year a swelling appeared and increased slowly and without pain in the above named region, causing the right eye to be pushed outward. He thinks the swelling has remained stationary for the last eight years. Five years ago a discharge of pus from the right nostril commenced and has continued ever since. Four months ago an abscess formed in the inner canthus. It was opened and left two fistulous openings which discharge a moderate amount of pus.

Present condition.—The patient is well nourished, somewhat pale, but otherwise looks healthy.

On the right side of the root of the nose is a flat prominence which fills up its inner third from the superciliary arch down to the infra-orbital ridge and extends a little in front of the bridge of the nose. The superciliary region of the frontal bone, that is, the anterior wall of the frontal sinus is not enlarged or pushed forward. The skin covering the tumor is normal with the exception of a red inflamed area around the two fistulous openings. The probe introduced through these, finds roughened bone near the surface, and the entire tumor feels hard, as if consisting of bone covered only by skin. The infraorbital margin can be traced to within a line or two in-

¹Langenbeck, Archiv für klinische Chirurgie, 1881. B. 26, p. 589. Ein Fall von linksseitigem Stirnhöhlen-Osteom, nebst Bemerkungen über die in den Nebenhöhlen der Nasen, sich entwickelnden Osteome.

²Ibid. B. 32, Heft 3, page 677. Ueber todte Osteome der Nasen und Stirnhöhlen.

³Transactions of the Pathological Society of London, 1868, page 314.

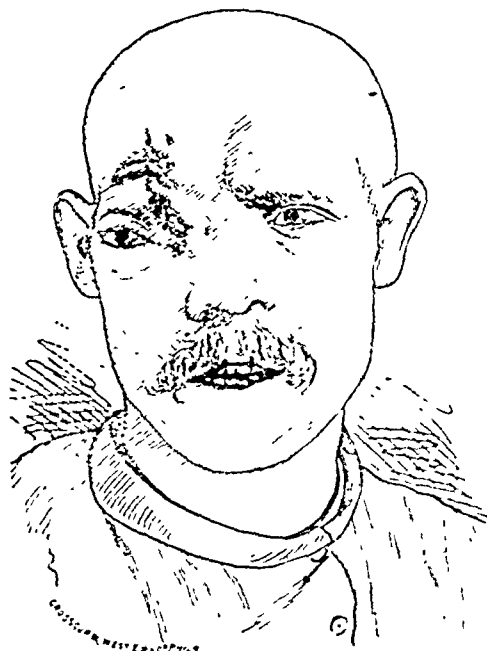
side the infraorbital foramen, where it gives place to the hard tumor arising from below.

The eye is pushed downward and somewhat outward, and on examination by Dr. E. M. Smith, oculist to the Cook County Hospital, presents the following condition: Right eye deviated outward and downward; distance from nasal crest to pupil on left side, 30 mm.; on right side, 50 mm.; consequently the outward deviation is 20 mm.; deviation downward, 10 mm.; exophthalmos, 7 mm. There is slight hypermetropia, the pupil is active, the tension of the eyeball normal. Ophthalmoscopic examination shows the fundus normal, the optic papilla not swollen, but the veins are somewhat engorged and tortuous. Acuteness of vision good.

Inspection of nose shows, an inch and a half inside the nostril, instead of the inferior and superior meatus and the concha, an irregular mass covered with bluish-red mucous membrane, and to which several small polypi the size of a pea are attached.

The infraorbital region is somewhat prominent in its nasal half, but no distinct tumor can be felt behind the upper lip above the alveolar process of the upper maxilla.

Inspection of the mouth and palate shows no difference between the two sides, and the soft palate and pharynx are normal. Rhinoscopic examination is impossible on account of the thickness and size of the soft palate, the movements of which the patient cannot control. Palpation of the nasopharyngeal cavity with the finger reveals a hard, irregular, rough, bony mass filling up the right posterior coana. A small exploratory incision dilating the fistulous opening of the tumor, in the inner canthus, showed the roughened bony surface of a large osseous tumor which was hard and immovable.



Ethmoidal Osteoma.

Diagnosis.—Orbital osteoma originating in and being part of a large ethmoidal osteoma. The place of origin either in the lower medial point of the frontal sinus or in one of the ethmoidal cells.

Operation.—On May 3, 1887, the patient was anesthetized and an attempt made to introduce a Bellock's tube with a view of tamponing the right cavity of the nose posteriorly and anteriorly, so as to avoid hæmorrhage down into the pharynx. This was frustrated by the tumor in the nose which made the introduction of the tube impossible. The patient was then placed on his back, with his head hanging downward, to be operated upon in Rose's position. A longitudinal incision was made midway between the eye and the root of the nose, commencing on the frontal bone an inch above the orbit and extending downward three inches to the ala of the nose. The incision having been carried down to the tumor, the soft parts were detached by a gouge from the anterior and orbital surface of the latter. The tumor was found to extend far back in the orbit, from an inch to an inch and a half. The surface of the tumor is very hard and the tumor itself immovable. With a view of getting at the base of the tumor, if it existed, or rather, of uncovering the mass of the tumor, I removed with the chisel the nasal and frontal portions of the superior maxilla and the right nasal bone, together with the nasal process of the frontal bone. Having thus opened the frontal sinus I was so fortunate as to find the end of the tumor reaching up, with only a small corner which was not attached to the walls of the frontal sinus at all. Through the large lateral opening into the nasal cavity, the tumor was found filling it up and by grasping with a firm bone forceps, it was easily made movable and brought out through the opening. The bony tumor which was formerly felt in the posterior nares was still there, but it was loose and was removed through the same opening as the other tumor. There was now left a large cavity opening into the frontal sinus and posterior nares, and the nasal and sub-maxillary cavities below. In the orbit, the periosteal covering of its inner wall was intact, covering the eye and its accessory organs. The remainder of the cavity was covered with its mucous membrane, on which several small polypi were found and removed.

There was no considerable hæmorrhage and the wound was united and the cavity washed and packed with iodoform gauze. With the exception of a slight rise in temperature on the second day, the course of the after-treatment was apectic. The iodoform gauze dressing remained until the close of the second week, at which time the wound had united.

Description of Tumor.—The living osteoma weighs two ounces, measures $2\frac{1}{2}$ inches in length and $1\frac{1}{2}$ inches in diameter; it is irregular in shape, since it consists of several portions, corresponding

to the different cavities which it occupied. These portions, separated by distinct depressions from the central body of the mass, are: 1. The orbital portion which forms a rather square mass of bone, measures $1\frac{1}{2}$ inches from above downwards, $1\frac{1}{2}$ inches in antero-posterior, and $\frac{3}{4}$ inch in transverse diameter. Its anterior ridge is denuded and roughened, while the rest of the tumor is covered with periosteum and a thick layer of mucous membrane. The orbital portion reaches from the internal anterior border of the orbit back to the orbital foramen. From the upper inner corner of the orbital portion a small round projection the size of a pea extends up into the frontal sinus. 2. The portion occupying the antrum of Highmore is a rounded pyramid $\frac{1}{2}$ inch broad $\frac{1}{4}$ inch high, and occupies the cavity mentioned, the nasal wall of which has disappeared. 3. The nasal portion, which forms the bulk of the osteoma is an irregular square of the above mentioned diameter in all directions; its inner surface is covered with a thick layer of mucous membrane, from which three mucous polypi the size of a pea have grown out. At the anterior upper corner of this nasal portion is a large polypous growth $\frac{1}{2}$ inch long, $\frac{1}{4}$ inch broad, pedunculated. It contains a small bony nucleus the size of a pea; in other words forms a small osteoma, by means of a pedicle movable against the large tumor, in which there is a small depression into which it partially fits. The posterior inferior surface of the nasal portion is concave, 1 inch in diameter, covered with a thick layer of smooth connective tissue. The concave surface forms a cup into which the upper rounded surface of the dead osteoma, so to speak, articulates. On the middle of the inner surface of the nasal portion is found a square plate of the ethmoid bone $\frac{1}{2}$ inch in diameter, which I consider the point of origin of the osteoma.

The cut surface of this large osteoma shows a peripheral layer $\frac{1}{4}$ inch in thickness, of extremely hard, compact osseous substance; so hard that a sharp chisel or knife will only with difficulty cut into it, and a smaller central area of cancellous substance, which is so friable as to be penetrated with considerable ease with sharp instruments.

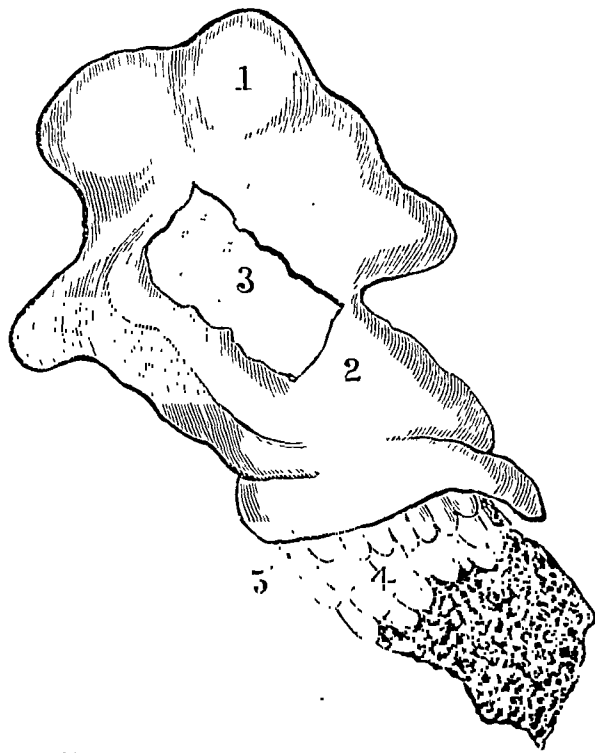
Microscopic examination of the layer of soft tissue covering the tumor shows the following: A layer of cylindrical epithelium, under which is a heavy layer of mucous membrane proper containing numerous tubular mucous glands. Finally, nearest to the bone, a layer of fibrous tissue constituting the periosteum.

The dead osteoma is about $1\frac{1}{2}$ inches long, $\frac{3}{4}$ to 1 inch in diameter. Its upper surface, which has articulated in the above described cavity in the large tumor is rounded, slightly nodular, smooth and hard, like ivory. The rest of the surface is uneven and roughened. Parts of the tumor had been broken off, so that when the whole tumor was put together it would form a

large mass of the size of a walnut. The broken surface shows this to consist of a very thin outer shell of very hard compact bone substance, and within a mass of fine spongy substance, resembling pumice stone.

On the dead osteoma there is nowhere a trace of any membrane covering it and it emits a penetrating fetid odor. No odor at all emanates from the living osteoma.

Etiology and Mode of Origin.—Bornhaupt has found in the literature 23 cases of osteomas in the frontal sinuses, 12 cases of osteomas in the ethmoidal cells, 10 cases of osteomas in the antrum of Highmore, and 5 cases of osteomas in the sphenoidal cavity or sinus. In all 59 cases of encapsulated orbital osteomas. These seem to be more common than the orbital exostoses, of which the literature furnished him only 7 cases. This class of tumor is more prevalent in youth, 54 per cent. occurring before the age of puberty, 87 per cent. before the 30th year; that is, before the final or finished development of the accessory cavities of the nose. It is thus likely that they owe their origin to some disturbance in the development of these cavities.



1. Orbital portion of the living ethmoidal osteoma.
2. Nasal portion of the living ethmoidal osteoma.
3. Lamina of ethmoid bone from which the living osteoma originated.
4. Dead nasal osteoma.
5. Cavity in ethmoidal osteoma in which the nasal osteoma articulates.

A traumatic cause has been noted in 6 of Bornhaupt's and in the present case. Considering the general frequency of traumatism in this region, it

is very unlikely that it plays any part in the etiology of these tumors.

Whether the tumors originate in aberrating islands of cartilage of the primordial cranium or in an embryonal matrix of the periosteum of the membranous cranium, is as yet an open question. The chief argument against the origin from cartilage is, that no partly cartilaginous osteoma has ever been found in or around this region. It is therefore more probable that they develop from the periosteum on the walls of the cavities mentioned.

Pathological Anatomy.—The tumors consist of a mass of bone with a covering of periosteum and mucous membrane.

a.—The osseous mass of the tumor has the following characteristics: The shape of the tumor originally is round. When it enlarges and extends into the orbits or any other adjoining cavity the form becomes modified. At the place where the tumor passes through the wall or opening into the cavity, a contraction or neck forms, on the distal side of which, as if further growth was not now restricted, a roundish, more voluminous portion develops. Thus in the specimen here presented we easily recognize an orbital portion with a depression or neck separated from the larger nasal portion, and at its outer lower point of union with the former, a maxillary portion extends into the antrum of Highmore.

The surface of the osteoma is irregularly nodulated.

The tumors are extremely hard, like ivory, especially on the surface. Thus it is impossible to chisel into or cut away pieces of them. On the cut surface we find a hard peripheral layer surrounding a more spongy center. Sometimes a laminated arrangement of the peripheral hard layer is found. The central spongy area has been described as resembling pumice stone. Whenever the osteomas have a pedicle or base as when they develop in the frontal sinus, as a rule the base is composed of spongy tissue. Thus the tumor can be successfully attacked at this place only. It has often happened that while the operator has been engaged unsuccessfully in chiseling at the body of the tumor it has suddenly become loosened by the breaking of the pedicle.

b.—*The Covering of the Tumor.*—All encapsulated osteomas are covered with a layer of soft tissue, namely, first, periosteum, and outside of this mucous membrane. The latter contains the usual tubular muciferous glands of the nasal mucous membrane, and is covered with cylindrical or fimbriated epithelium. This layer of mucous membrane is sometimes (as in the specimens here presented) thickened and covered with mucous polypous growths.

Invasion of neighboring cavities takes place where the osteoma has grown too large for the cavity in which it originated. The orbit

is most commonly invaded as its walls participate in the formation of the ethmoidal, frontal and maxillary sinuses. The growing osteoma presses upon the bony wall of the orbit, which at the place of contact atrophies and disappears, and the osteoma with its covering of mucous membrane enters the orbit. If the tumor enters from the frontal sinus the eye is pushed downwards and outwards; if the ethmoidal sinus is the point of origin the eye-ball is dislodged outwards. Finally, if the tumor originates in the antrum of Highmore, the displacement will be in an outward and upward direction.

As soon as the orbit is opened, and in consequence, the mucous membrane covering the osteoma comes in contact with the connective tissue spaces of the orbital periosteum or the orbital connective tissue, an abscess forms. The microbes present on the surface and in the mucous glands of the mucous membrane invade the lymph spaces of the affected tissue and, necessarily, traumatic infection resulting in suppuration takes place. Thus an abscess forms near the inner canthus of the eye. In older cases we find one or more fistulous openings leading down to the surface of the orbital portion of the osteoma.

Far more serious in its consequences is the invasion of the cranial cavity by osteomas developed in the frontal or sphenoidal sinuses. The suppuration first between the dura mater and the cranium, later on perforating the dura mater, terminates the patient's life by suppurative leptomeningitis, or abscess of the brain.

Bornhaupt found that of 17 cases of osteoma of the frontal sinuses, in 11 cases, or 65 per cent., opening into the cranial cavity had taken place.

Symptoms.—In the beginning the symptoms are not characteristic as the osteomas grow very slowly, are painless and cause no inflammation as long as they stay in the cavity in which they originate. Enlargement of the wall of the cavity is often found, and next we find a hard, painless tumor in the inner canthus of the eye.

Displacement of the eye-ball is often the first symptom that calls attention to the existence of a tumor.

By filling up the sinus in which it develops and occluding its outlet accumulation of mucous or catarrhal fluid takes place, with subsequent distension followed by the symptoms characteristic of this condition. Finally the abscess forms under the conditions described above.

Diagnosis.—An extremely hard, painless tumor of slow growth, at the inner wall of the orbit, accompanied by abscess and fistulous opening—resulting therefrom, makes the diagnosis of encysted osteoma reasonably easy. A very important point to ascertain now is the place of origin of the tumor. As above stated, the deviation of the eye-ball gives us the most important information in this direction. If the eye is pushed down-

ward and outwards, we may expect an osteoma of the frontal sinus; if directly outward the tumor comes from the ethmoidal cells; if upwards and outwards, from the antrum of Highmore.

Prognosis.—The prognosis depends upon the seat of origin of the tumor. Osteomas of the frontal sinuses must be considered as very dangerous. The mortality after the operation has been, according to Bornhaupt, 64 per cent. Of 11 cases, 7 died from meningitis, or abscess of the brain.

Osteoma of the sphenoidal sinus has been operated upon only once by Ferguson. The patient died from collapse shortly after the operation. Other tumors of this variety have not been observed in living patients, but found on specimens in museums.

In the case of osteomas developed away from the cranial cavity the prognosis is entirely different. The ethmoidal, nasal, and supra-maxillary osteomas are not dangerous and can be removed with safety. Out of 12 cases of ethmoidal osteomas, 11 were cured by operation, 1 by spontaneous exfoliation.

Osteomas of the antrum of Highmore give also a good prognosis for extirpation for the same reason as that given for the ethmoidal tumors, namely, the absence of injury to the cranial cavity.

Treatment.—The encysted osteomas have no connection with syphilis, and consequently are not amenable to internal medical treatment. Surgical treatment alone comes into question, that is, extirpation of the tumor. Considering the anatomy of the encysted osteomas, as above described, the plan for operating is obvious. We must expose the tumor by removal of its encysting bony walls, find its base or pedicle, and divide the latter, in order to free the tumor. The extreme hardness of the body of the tumor makes any attempt at removal piecemeal by hammer and chisel almost impossible. Knapp worked five hours on a tumor of the frontal sinus and was able to remove only a small piece. He was obliged to abandon the operation and the patient died from meningitis seven weeks later. Maissonneuve, in trying to chisel off a prominent nodule of an orbital osteoma originating in the ethmoidal cells, found such a degree of hardness that he had to work for a long time with all the different bone instruments with which Charrière, who was present, could furnish him, before he succeeded in removing even a nodule of the tumor.

If we then cannot attack the tumor from its surface, we must lay it open, expose it by removing with the chisel the bones that cover it, the anterior wall of the frontal sinus, nasal and maxillary bones. When the tumor is exposed we look for its base or pedicle. Knapp has pointed out that this part of the osteoma is often composed of soft, spongy bone tissue, so that the chisel may be

used here with advantage. In operating upon ethmoidal osteomas it makes no difference whether the base is hard or soft, because the fine, thin plates of the ethmoidal bone, from which the tumor has grown out, break off and fall out with the tumor with almost the first stroke of the hammer. The specimen here presented shows a plate of the ethmoid bone adherent to the tumor.

The removal of the osteomas from the frontal sinus is more difficult, not so much because the plates of the frontal bone are stronger than the thin ethmoidal plates, but because we dare not break off the cerebral plate of the frontal sinus for fear of meningitis. We must try to divide the pedicle with the chisel without employing much force, and rather leave part of the osteoma than open the cranial cavity (v. Oettingin and Birkett). But even if the most careful manipulation of the instruments is observed, as in Socin's operation described by Banga, in which the tumor, to the astonishment of all present, became loose by almost the first touch of the hammer, the cranial cavity may be opened with disastrous result.

This often unavoidable danger in operating in the frontal sinus induced Mackenzie and Berlin to advise enucleation of the compressed, inflamed, doomed eye, instead of the radical extirpation of the tumor. However unsatisfactory this remedy seems from a surgical standpoint, it deserves earnest consideration, inasmuch as the osteomas are benignant tumors of slow growth and may in course of time separate spontaneously from their point of origin.

Spontaneous loosening of the encapsulated osteomas takes place not infrequently. Beside the small loose or dead osteomas found accidentally in frontal sinuses, of which Tillmans reports 6 cases, we find a case described by Middlemore, who tried to remove an orbital osteoma, but gave up the operation. Nine months later the tumor became loose and was extracted. A similar case is reported by Imre, cited by Tillmans. An orbital osteoma the size of a fist had pushed the eye down to the angle of the mouth. After 43 years duration it became loose spontaneously, and the eye returned to almost its normal place in the orbit. Hilton saw a large osteoma of the antrum of Highmore which had destroyed the eye, become loose after 17 years, during suppuration.

Tillmans reports a case in which he removed by operation two loose dead osteomas of the frontal sinuses and an osteoma of the nasal cavity. He points out that osteomas of the nasal cavity have been as yet very seldom reported. Habermaas saw a case in v. Brun's Klinik. The tumor had originated in the ethmoid bone, with a pedicle the size of a thumb. It was successfully removed by operation. He remarks that the so-called nasal stones or concretions have sometimes been found to contain a nucleus of bone. This fact makes it probable that dead osteomas of the nasal cavity

are more common than has been hitherto believed.

The cause of the spontaneous loosening and death of the osteomas is as yet not satisfactorily settled. Suppuration is generally conceded to be one of the causes.

OBSTINATE HÆMATURIA.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. D. DIDAMA, M.D.,

OF SYRACUSE, N. Y.

Bloody urine is common enough. As is well known, the blood may come from lesions of the urethra—lesions sometimes produced by over-cutting strictures—lesions then so painful and persistent that the last estate of the victim is much worse than the first.

The blood may have its origin in the bladder, from fragile veins or papillomata or, as in one case which I saw, from an enormously enlarged prostate, on the raw surface of which a large, rough, concave calculus sat like a crown of thorns.

The bleeding may start in the ureter or pelvis of the kidney, from the cutting of sharp gravel. Or, as in the exanthems and especially after them, it may come, tawny and thoroughly mixed with the urine from the tubules.

It is usually practicable and not very difficult to determine the origin of the hæmorrhage. The flow, often transitory, may be recurrent with intervals whose uncertain length may or may not be the result of treatment.

Every practitioner is familiar with these varieties. He knows the established medication. From the infusion of agrimony or yarrow, recommended more than a hundred years ago by the pious John Wesley, in his "Primitive Physic," to the gallic acid and ergot of modern times, the number of remedies brought forward is almost unlimited. Indeed the excessive richness of the pharmacopœia in urinary hæmostatics, instead of being satisfactory, is absolutely embarrassing—not to say suspicious.

In most of these ordinary cases recovery takes place from the healing influence of time, with or without the help, or hindrance, of drugs.

But hæmaturia is not always mild and tractable. Occasionally, but rarely, cases occur which are extremely perplexing and obstinate.

The *indicatio causalis* furnishes no aid in the treatment, for the cause often eludes the most thorough scrutiny. Attacks on the disease itself, however intelligent, unremitting and persistent, not infrequently end in utter and mortifying discomfiture.

I give the briefest outline of five cases of obstinate, chronic hæmaturia, the only ones that have come under my observation and treatment. Under the care of eminent physicians, for periods from a few weeks to three months, four of these cases

had the best treatment commended by authorities and devised by ingenuity. The treatment in each case was an entire failure. Yet under the use of the remedy to be mentioned in this paper, recovery took place within a period of nine days in four of my five cases, and in the fifth within three weeks.

Case 1.—Mrs. J., a strong, industrious house-keeper, some 40 years of age, had been annoyed with bloody urine for more than six weeks. All bodily functions were normal. She did not know the cause of the hæmaturia. She suffered no pain during nor after micturition, but she was considerably weakened by the constant loss of blood. She had derived no benefit from the numerous domestic remedies which kind friends had recommended.

In one week after commencing the use of the remedy, presently to be described, the hæmorrhage entirely ceased and never returned.

Case 2.—L. F. C., aged about 35, Supervisor of Tompkins County, of light build, but wiry, and fond of all wood, field and stream sports, had been under the care of several bright physicians of Ithaca and elsewhere for more than a month. His urine was never free from blood. The various drugs employed very faithfully never influenced, even temporarily, the amount of the hæmorrhage. After commencing the treatment, which I am purposely withholding in order to sharpen your attention, the bleeding stopped suddenly on the eighth day and never returned. Mr. C. attributed the hæmorrhage to taking cold while gunning.

He died two or three years subsequently of anthrax.

Case 3.—Rev. Dr. N., of New York, 50 years of age, had been under the care of his personal friends, the deservedly eminent Dr. Jared L., and Dr. Alonzo C. The origin of the hæmorrhage was not satisfactorily determined, but from some slight pain in the back the suspicion was entertained that the offending factor was a calculus in the pelvis of the left kidney.

It is not necessary to state that the treatment of their distinguished patient was the best that great wisdom, extensive reading, and a half-century's active practice could furnish.

But the hæmaturia was not controlled in the slightest. At last the reverend gentleman was advised to relinquish his work, travel in Europe and drink the light wines of that country. At this time he had become so weak that he could not leave his house.

But in less than one week after commencing with the remedy, which will not much longer remain unrevealed, the hæmorrhage suddenly and entirely ceased. The trip to Europe was indefinitely postponed. The arduous labors of the good pastor were soon resumed and continued for nearly twenty years. But the hæmorrhage never returned.

Case 4.—Mrs. W., of Rochester, a lovely woman of 35 years, and good constitution, had an attack of hæmaturia in the spring of 1885. Her physicians, Dr. E. and his partner, both enthusiastic and determined, and eminent among the many distinguished medical men of that charming city, after three months of faithful treatment, advised her to go to New York to consult the great and good Dr. F., and the distinguished gynecologist, Dr. E. They provided her with a letter in which they stated that they had employed every astringent in the whole pharmacopœia without the slightest effect either good or bad. They had washed out the bladder with styptics and all other ancient and modern applications, but the blood had always appeared in the usual quantity at the very first urination after the irrigations. There was no diminution in the amount of blood during or after the administration of any and every remedy employed. An exclusive milk diet produced no effect. Confinement to the house, and even to a horizontal position, never lessened the amount of the hæmorrhage. Neither did free indulgence in all kinds of food and in all the exercise of which in her debilitated state she was capable increase the amount of blood voided. Only at the monthly period—which was free from pain—was the hæmorrhage from the bladder increased.

At the solicitation of friends, and with the hopeless assent of the patient, I visited her at her summer home in 'Sconset. I found her exsanguined. I made as thorough an examination as was practicable. The amount of urine was normal, but it was thoroughly mixed with dark blood, some of which after a time settled in a diffuse, soft clot to the bottom of the vessel. The history of the case and the discovery of tenderness on careful manipulation led to the conclusion that the hæmorrhage arose, in part at least, from the right ureter and pelvis. Examination of the epithelia some weeks afterward seemed to verify this diagnosis.

I related my limited experience and offered to prescribe, but made no promises. The patient, more from politeness than from faith, consented to permit one more attempt in her behalf. Treatment was commenced as soon as medicines could be procured. The remedies were taken faithfully but, as in the other cases, no improvement took place for a week. Indeed, as this was the menstrual period, the amount of blood in the urine actually increased.

The husband now appeared on the scene. I had gone home from my vacation. After consulting with the excellent local physician, Mr. W. decided to go at once to New York, whither he ought to have gone at first. On the eighth day after beginning with the new remedies, the still extremely pale, but somewhat stronger, invalid went by rail and steamer a day's journey to the metropolis, arriving too late in the evening to consult the eminent practitioners. She was much

fatigued, but she noticed an improved condition of the urine. The next morning, for the first time in four months, the urine was entirely free from bloody stain. The New York physicians were not consulted. A return of the hæmorrhage occurred the next summer, but it was soon controlled by the new treatment. Since then there has been no recurrence.

Case 5.—The last case was M., aged 30, laborer, Syracuse. Summer of 1887. No pain, no tenderness, hæmorrhage abundant. Bladder had been washed out and he had taken, under the care of Prof. H., a graduate of Syracuse College of Medicine, moderate doses of the remedy I am anxious to divulge. But the treatment was changed after a little and a cure was not effected. After several weeks of non success, the case came under my observation and was subjected to considerably larger doses of the remedy than I had found necessary in any former case. And even under this management, the hæmorrhage lasted nearly three weeks, with occasional intermissions; when it ceased entirely and has not again returned.

The treatment consists in the administration of 60 grains of alum in the course of twenty-four hours.

In most of the cases this was given in three 20-grain doses dissolved in a goblet of water.

In Mrs. W.'s case the alum was administered every three hours in 8-grain doses, dissolved in half a glass of water. In her case also, on account of the extreme anæmia, 8 minims each of tincture of chloride of iron, dialysed iron and dilute phosphoric acid were given in water after each meal.

In M.'s case the dose of alum was increased to 10 grains every three hours.

Unlike most astringents, alum, in these large doses, does not constipate the bowels. This is doubtless owing to the fact that being largely diluted with water it passes readily into the blood and through the urinary passages. This dilution is very important and should not be neglected. Nausea has not been produced in any case.

I am aware of the ready criticisms which the learned and cautious physicians present will naturally make, and I admit their full force. *Post hoc* is not necessarily *propter hoc*. One swallow does not make a summer, nor satisfy a summer thirst. But *post* may be—and often is—*propter*. And then a whole flock of swallows may be regarded as a pretty safe harbinger of a warm season.

I admit that my aviary of *post hoc* birds is still too limited to be very significant. But these are all I have. I have been many years capturing them. They have a family resemblance. And, somehow, do they not really seem to have a very *propter* kind of look?

A NEW YORK JURY recommends that druggists shall not be allowed to sell rat poison except upon the prescription of a physician.

A NEW METHOD OF INCISION OF THE INTESTINE.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. H. MUDD, M.D.,
OF ST. LOUIS, MO.

Enterectomy, or the resection of a portion of the intestine, is regarded as such a tedious and prolonged procedure that many operators hesitate to undertake it in cases in which it is the ideal and desirable operation.

Prolonged exposure of the abdominal viscera and much manipulation of the intestines, adds so much to the shock and also to the danger of exciting peritonitis, that the time and manipulation required by the ordinary methods of excision often render impossible the attempt to thus restore the natural channel.

The tedious and time-taking steps in the operative methods commonly used, have consisted:

Firstly, In the great number of interrupted Lembert or Czerny-Lembert sutures used—twenty or thirty being the approximate number.

Secondly, In the difficulty of placing accurately the sutures at an even distance from the serous margin of the excised border. This margin is concealed and overlapped by the everted mucous membrane; the cut edge is soft, pliable, and hard to manage while placing the sutures.

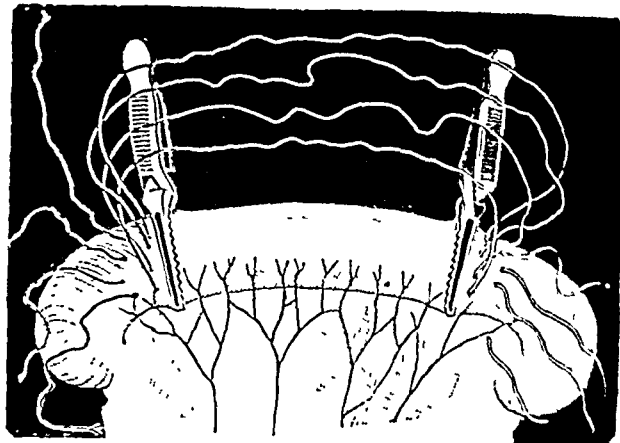
Thirdly, There is difficulty in finding an instrument to compress the bowel so as to prevent the escape of faecal matter without injuring its delicate structure, and at the same time not impede the movements of the operator. The fingers of an assistant are the best, but these tire when so many sutures are to be placed, and the hands of an assistant are in the way of the operator.

I shall not attempt to compare the various operative methods pursued in the resection of the intestine, nor yet attempt to discuss fully the merits of the method which I submit to you for your consideration. The method I have followed obviates some of these delays and difficulties; hence, I venture to submit it to you for your criticism and for trial. The value of any such procedure depends somewhat upon the operator and his familiarity with it, and its general utility can only be attested by the experience of the various surgeons to whom it may commend itself.

The method I have followed during the past few years is one that I first tried March 16, 1886, when called upon to excise a portion of gangrenous intestine for hernia, and as it answered well, I have continued its use in such cases as have demanded resection at my hands, as also in some experimental work.

The method is as follows: The loop of the bowel being made free and easy of access, two pairs of forceps are placed upon it, marking the lines at which the excision is to be made. Seven or eight presection interrupted Lembert sutures are

to be placed before the portion of the bowel to be removed is excised. The outer borders of the forceps serve as an accurate guide for their insertion. A common cambric needle, threaded with a long piece of fine silk, is used to place these interrupted sutures. See cut No. 1.



They are quickly placed, for the intestine is firmly held by the Péan catch forceps or the preputial forceps, which are used as clamps. The needle is entered about three-eighths of an inch from distal side of one pair of the forceps, passed through the serous and muscular coat into the sub-mucous, making its exit about an eighth of an inch from the line of the forceps, after traversing nearly one-fourth of an inch of the intestinal wall. The needle is then carried across the space between the forceps and enters the intestinal wall one-eighth of an inch from the proximal side of the other pair of forceps, and traverses the wall of the intestine, as before described. The thread of the suture thus placed should be long, so as not only to leave a free loop between the two ends of the bowel, but also to give the free ends which are necessary to ease and security in managing and tying the sutures. Two of these sutures, seven in number, should be so placed as to have one on each side of the mesentery; another at the free margin and two intervening sutures on each side of the bowel, dividing equally the space between the free and mesenteric borders. These sutures should be left with long threads and not tied until after the excision is made.

The mesentery should now be secured, by including it, when not more than two or three inches of the intestine is removed, in a single ligature which should be placed parallel to not more than half an inch from the mesenteric border of the intestine. The section of the mesentery is made between the ligature and the border of the gut. The portion of the mesentery included should be fully equal to the intestine excised.

The section of the intestine is now to be made. Before making the section, the bowel at the proximal and distal side is emptied of its content and held by an assistant with his fingers. The opera-

tor now slips a finger on each side of the portion to be removed, but under the loops of the sutures, and carries these loops first to the distal and then to the proximal side of the two pairs of forceps. The scissors are introduced between the suture loops and the bowel. The section of the bowel is made first at the distal side and then at the proximal end. The bowel and the forceps are removed together.

The line of the Lembert sutures, when thus placed, is even and regular. These presection approximation sutures are tightened as soon as the portion to be excised is removed, and the divided ends cleansed. A continuous suture of fine catgut carried about the bowel, approximates more perfectly the surface of the serous membrane, and closes any gap that may be left between the interrupted sutures. (See cut No. 2.) The seven interrupted sutures thus placed are quickly and readily tied after the section is made. The continuous suture is easily applied and does not necessarily invert any more of the bowel. The time occupied in such an operation ought not to be more than fifteen or twenty-five minutes, after the bowel is exposed and makes possible an enterectomy when the older methods are not permissible, for the time occupied need not exceed that necessary for the production of an artificial anus.



The advantages believed to be possessed by this method of operation, are:

1. The manipulation of the portions of the intestine which are to be united is reduced to a minimum.
2. All tissue which has been included in the grip of the compression forceps is removed.
3. The line of the forceps gives an accurate and perfect guide for the placing of the sutures, and makes certain the section and the reunion of the bowel at right angles to its axis.
4. The rapidity with which the interrupted Lembert sutures can be placed is very much greater than where the attempt is made to put them in position after dividing the bowel, and the divided ends are not long exposed; hence, it is more nearly the ideal aseptic operation.
5. The union of the divided ends is accurate

and sufficiently firm to retain fluid matter. This is accomplished with a few—seven or eight—interrupted silk sutures and a continuous catgut suture placed in or near the same line as that occupied by the interrupted sutures. This continuous catgut suture extends around the circumference of the bowel, reinforcing and sealing the Lembert sutures.

6. The eversion of the mucous membrane is controlled and fecal extravasation prevented.

7. The time necessary to complete the operation is much shortened, because (a) the clamps give easy and perfect control of the suture line; (b) a limited number of interrupted sutures are used; (c) the continuous catgut suture is quickly and easily placed; (d) there is no delay in pushing out of the way the everted mucous membrane which so much delays the placing of the interrupted sutures.

The difficulty of securing the serous margin and holding quietly the edge that is to be approximated can be appreciated only by those who have made the effort.

The only stumbling block in the way of a rapid and satisfactory operation is the management of the long threads of the presection Lembert sutures after placing them, and while making the section of the bowel. This is easily overcome by placing them on a folded towel and by slipping the fingers under the central portion of the loops on each side of the bowel, and carrying the loops back with the fingers beyond the forceps, over the healthy intestine, previous to making the section. The interrupted and the continuous sutures should be carried well down into the wall of the bowel, so as to include the sub-mucous tissue.

The Péan catch forceps answer well for the clamps. I have, in the human subject, had a successful case where a free evacuation of the bowel followed the operation within twenty-four (24) hours, and occurred daily thereafter. Post-mortem examination after thus excising gangrenous intestine, the result of strangulated hernia, has uniformly demonstrated good union and no leakage at the intestinal wound.

This method of excision was in part described by me in July, 1887, at the meeting of the Mississippi Valley Medical Association, held at Crab Orchard Springs, Kentucky.

THE DEATH is announced of the first female medical practitioner who settled in the important Siberian city of Tobolsk, where she had entire charge of the female department of the city hospital and lunatic asylum. She lectured also at the School of Midwifery and had a considerable private practice. In addition to her multifarious duties she found time to pursue scientific investigations. She is stated to have habitually worked sixteen hours a day.

the bone, although usually one can neither see it, nor feel any carious bone with the probe. The specimens of necrotic portions of the middle and internal ear that have been expelled after years of suffering, which even the most skillful medical attention could not allay, are not often seen, and only rarely have we the good fortune to admire the *vis medicatrix naturæ*, when the patient brings some day a piece of bone to us which he has found after syringing the ear. The majority of such cases end fatally, unless operated on in time.

During my visit in Europe my attention was called to the use of lactic acid in chronic suppurative otitis media, and after my return I resolved to apply it in the first case in which it would be indicated. I did so, and was very agreeably surprised at the rapidity with which I was able to arrest the discharge. It was a case of very long standing, where both ears were affected and where everything possible under the sun had been applied, but in vain. In that first case, as I was not sufficiently acquainted with the effects of such applications, I made the patient come every day, and instilled the diluted lactic acid into both ears, leaving it there from ten to twenty minutes. The offensive odor disappeared completely after the first four days, not to return, and in the course of six weeks every trace of the discharge was gone, and as the drum showed an inclination to heal up, I accelerated this by applications of lapis mitigatus in substance. I afterwards directed the patient how to use the acid at home.

I have not the intention of taking up your valuable time by giving you a complete history of the cases that I have treated with lactic acid. Be it sufficient if I describe the way I found most effective, and assure you that if you will give it a trial in cases where it is indicated you will have every reason to be as satisfied with the results as I was.

On account of the acid macerating the epidermis with which it comes in contact and producing a very unpleasant soreness of the ear, if nothing worse, it is important to protect the meatus auditorius externus from such contact. After trying oil, vaseline, cocoa butter and other fatty compounds in vain, I found that by covering the meatus auditorius externus with a thin lining of paraffine I was enabled to leave even a 30 to 40 per cent. solution twenty minutes in the ear without producing the slightest irritation. It is well to begin with weak solutions and observe how the patients stand them. If the effect is satisfactory one can then go on gradually to stronger solutions of the acid which can be applied, if the patient is intelligent enough, by himself, and must be left at least twenty minutes in the ear. The paraffine must not have too low a melting point, the ear not being very sensitive to moderate heat, and can be applied with a camel's hair brush, care being taken that all those parts of the outer ear with which the acid

comes in contact be well protected. After the discharge is stopped it is not necessary to go on with the lactic acid, but keep the patient under observation, and insufflate boracic acid, finely powdered, from time to time. If the drum shows no inclination to heal up it will usually be found necessary, as well for protection as for improvement of the hearing, to insert artificial drums. Some patients' ears stand them very well and their hearing is much improved by wearing them; others resent a foreign body like that very energetically and respond very quickly with acute inflammation and intense painfulness. In such cases I have found that a layer of boracic acid, finely powdered, applied in such a way that it forms a somewhat thicker kind of artificial drum, is not only stood very well but also improves the hearing to quite a considerable degree.

[A few weeks before this paper appears I saw a lady who had been provided with such a layer of boracic acid to act as artificial drum, about six months ago, and found the boracic acid powder still in place, with a ring of wax developed around it and holding it in position.]

USE OF ANTIPYRIN AND ANTIFEBRIN FOR HEADACHES.

BY J. M. G. CARTER, M.D., Sc.D., Ph.D.,
OF WAUKEGAN, ILL.

For some time now I have been using antipyrin and antifebrin in nervous headaches. My attention was first called to the use of antipyrin in these cases by Prof. Walter S. Haines, M.D. I have found a few cases of sick headache that would yield to this remedy, but generally in persons of nervous temperament. My cases have all been non-febrile. The remedy is prescribed in 5-grain doses every hour until the headache ceases. Often one powder is sufficient, and rarely are more than two or three required.

I have been told that antipyrin has none of its depressing effect upon the heart in non-febrile cases. Such is not my observation. In frail nervous patients, especially in delicate females of nervous temperament, I find that antipyrin does disturb the heart's action, even in 3-gr. and 5-gr. doses. This effect of antipyrin followed notwithstanding the good effect of relieving the headache. To obviate this difficulty was a desirable point to gain and, remembering that there has not been so much complaint against antifebrin, in its disturbance of the heart, as against antipyrin, I determined to try its use. I was much pleased to find that, in cases where the antipyrin cannot be borne, the antifebrin acts admirably. I give the antifebrin in 3-gr. or 5-gr. doses every hour until the headache ceases. Reference to the following few patients will illustrate the varied action of these drugs:

Case 1.—Mrs. A. Delicate health, occasional prostrating nervous headaches, lasting two or three days. Suffers much from neuralgia. Both antipyrin and antifebrin in full doses relieve the headache, but even a single dose of 5 grs. of antipyrin produces distress in the region of the heart, and makes its beat irregular. Antifebrin produces no such feeling.

Case 2.—Mrs. B. Delicate health, but stronger than the preceding. Persistent nervous headaches of two or three days' duration often. Relieved by both remedies. No trouble felt from either.

Case 3. Mrs. C. Has good health; never sick except with nervous headache, which is hereditary and lasts two or three days. No heart trouble from either remedy. Antifebrin makes no perceptible impression. Antipyrin gives almost instant relief. This is the first remedy this lady has found that would diminish her suffering. Nervo-sanguine temperament.

Case 4.—Mrs. D. Usually good health, but often suffers with intense nervous headaches, lasting from twelve to forty-eight hours. Antifebrin produces no beneficial effect. Antipyrin gives relief. Like the preceding, nervo-sanguine temperament. All these patients have borne children.

Case 5.—Miss E. Sister of the preceding patient and of the same temperament. Is somewhat rheumatic, sometimes having slight muscular rheumatism, especially intercostal rheumatism. Often suffers with excruciating nervous headache. Has never used antipyrin. Antifebrin acts quickly.

The return of the headache in none of these cases can be traced to the menses, and they have no regular periodicity.

LAPAROTOMY FOR THE REMOVAL OF A FIBRO-MYOMA.

Read before the Medical Society of the District of Columbia, March 27, 1888.

BY P. J. MURPHY, M.D.,
OF WASHINGTON, D. C.

Nellie B., white, single, æt. 26, was admitted to the Columbia Hospital for Women November 11, 1887. Previous to the summer of 1886 she had good health. At that time noticed a swelling in right side which gradually increased and troubled her a great deal. Menses have recurred regularly, lasting from four to seven days, without pain. At time of admission complained of being restless at night, of frequent smothering sensations and severe headaches. No trouble in voiding urine. Appetite and general condition good. Examination November 12 revealed a hard pear-shaped tumor of about the size of a head of a child 2 years old, extending from the brim of a pelvis upward nearly to the umbilicus, and freely movable laterally. By vagino-abdominal examination the uterus seemed to be slightly connected with the growth; cervix uteri somewhat shortened

and soft. Diagnosis of a fibro-cyst of the uterus was made. Menstruated November 19 to 28; flow profuse but not alarming. On December 1 was examined under ether and the growth was found to be freely movable in every direction except upward, and now quite reached the umbilicus. Body of uterus seemed to be displaced forward and to the right side and somewhat enlarged and hard. Some glairy mucus in cervical canal.

At a consultation of the Advisory Board of the hospital December 3 no definite conclusion was reached. From December 28 to February 22 electricity was applied daily (except during menstruation), about ten cells of a McIntosh galvanic battery being used, which gave as strong a current as the patient could bear without pain or too rigid contraction of abdominal muscles. Although the battery was faithfully tried the growth gradually increased, and at the time when electric treatment was suspended it reached a point about 2 inches above the umbilicus. Patient was discouraged with electricity and requested that the growth be removed by operation. At a second consultation of the Advisory Board February 29 it was decided to operate. Laparotomy was performed in the presence of Drs. Morgan and Head, of the Advisory Board, Dr. Linthicum, of Maryland, who formerly attended the patient, and Drs. Boyce and Sweetman, of house staff. An incision about 5 inches long was made in the median line midway between the umbilicus and symphysis pubis. When the growth was reached a number of large blood-vessels were seen upon its surface. It now seemed to be a continuation of uterus upwards, no line of junction being noticeable. A few smaller but harder growths were attached near the vaginal roof; one of which had probably been mistaken for the displaced uterus. Some of the gentlemen present felt the growth and thought that its contents were fluid. A trocar was inserted, but no fluid escaped. The incision was extended 2 inches upward to allow extraction of the tumor. When drawn out of the cavity it was found to embrace the uterus on every side, and its removal was agreed to.

MEDICAL PROGRESS.

METHYLENE AS AN ANÆSTHETIC.—DR. WM. H. DAY says that it is a mystery to him that an anæsthetic so safe and effectual as methylene should not have been more generally employed by the profession. A few deaths have been imputed to it, it is true, and occasional deaths will occur from any anæsthetic, however carefully administered, but notwithstanding, I think, methylene occupies in point of safety a first-class position. Some years ago the late Mr. Peter Squire asked me whether I considered methylene pos-

Recently methylal has been brought forward as a substitute for alcohol in the treatment of delirium tremens. In this way it is used hypodermically, and is said to act favorably as an anodyne and hypnotic. This drug, if required perfectly pure, is very expensive; that generally sold in the market at a low price is very inferior in quality, and contains acetone in free quantities, and the results obtained from its use are very different from those Dr. Richardson observed in his experiments.—*Asclepiad*, May, 1888.

IODOFORM IN HÆMOPTYSIS.—The difficulty of finding any successful method of checking hæmoptysis in tuberculous cases has led to the trial of many remedies. MM. Chauvin and Jorissenne, of Liège, publish a short account of the results of the administration of iodoform, at first along with tannin, afterwards by itself. In the first six cases pills were given containing iodoform $\frac{3}{4}$ gr. and tannin $1\frac{1}{2}$ gr. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis as many as five were given *per diem* for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months ago; and there has been no recurrence since. In the three cases recorded in detail, in which the iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij. of iodoform *per diem* in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine and therefore more useful. In all the cases during the past year in which they have given it there has been no relapse, and during the treatment no disturbance of digestion.—*Progrès Méd.*, May 19, 1888.—*Practitioner*, July, 1888.

ARTIFICIAL GLYCOSURIA PRODUCED BY THE SALICYLATES.—It is well known that the urine of patients under full doses of salicylic acid or the salicylates will often exhibit the reaction for sugar by Böttger's, Trommer's and other tests, but until recently the reducing agent was thought to be salicylic acid or one of the products of its decomposition. It has lately been shown that such urine will ferment with yeast, losing several degrees of specific gravity, and that the presence of sugar and its amount can be shown by accurate quantitative methods. Burton (*Lancet*) recently examined the urines of twelve persons who were taking large doses of salicylic acid, sodium or phenol salicylate, and invariably found sugar present, though often in very small amounts—the largest being gr. vj to the 5j. The

glycosuria, which is temporary, he surmises results through the action of salicylic acid on the diabetic centre, and that the benefit obtained by its administration in some cases of diabetes may be due to the opposite action of small and large doses.—*The Polyclinic*, July, 1888.

THE TREATMENT OF CHRONIC DIARRHŒA BY TALC.—The means at present employed in the treatment of chronic diarrhœas are as inadequate as they are numerous. DR. DEBOVE administered talc, in an impalpable powder, as being inert and not liable to undergo changes in contact with the intestinal secretions. He has given it in doses of seven to twenty ounces daily mixed with milk. In cases of diarrhœa due to tuberculous lesions of the intestines the treatment was uniformly successful, the diarrhœa being followed by an obstinate constipation. Curiously enough, he found that while giving the powdered talc patients tolerated substances which before they had been quite unable to retain. Milk, for example, which invariably gave rise to drastic purging, was given without setting up any disagreeable feelings. He has even been able to give a pound of oil within the twenty-four hours, and thus materially contribute to the nutrition of the patient. So far he has not tried the remedy in the diarrhœa of hot climates nor in children.—*The London Medical Recorder*, July 20, 1888.

THE OPERATIVE TREATMENT OF PRIAPISM.—DR. VORSTER, of Berlin, reports two cases of priapism relieved by operative interference. In the first case the patient suffered from nervous symptoms following a hæmorrhage (hæmophilia). The priapism followed a difficult faecal evacuation. The symptoms persisted for days, giving rise to atrophic paraphimosis (Rose). Incision of the preputium penis here relieved symptoms. In the second case a traumatism of the urethra with hæmatoma resulted from the kick of a horse. Here the blood tumor compressing the corpus cavernosum penis, and preventing venous return, favored the persistence of priapism. External urethrotomy, incision of the blood tumor (projecting into the lumen of the urethra), and emptying the hæmatoma of clots, relieved symptoms.—*Zeitschr. f. Chir.*, Bd. 27, Hft. 1 and 2. *Annals of Surgery*, July, 1888.

ANTISEPTIC SOAP.—PROF. AUGUSTE NEVERDIN recommends the following formula for the manufacture of a reliable antiseptic soap: Sweet oil of almonds, 72 parts; soda lye, 24 parts; potash lye, 12 parts; sulpho-carbolate of zinc, 2 parts; essential oil of roses, 9.5 parts.

IN CILIARY BLEPHARITIS. DR. GILLET DE GRANDMONT uses a preparation containing 1 per cent. of the iodo-chloride of mercury in pure vaseline. Apply morning and evening.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57. AND 59 LUDGATE HILL.

SATURDAY, AUGUST 11, 1888.

THE TARIFF ON INSTRUMENTS, BOOKS, AND DRUGS.

The New York Neurological Society has refused to indorse the resolution of the Georgia Medical Society requesting the removal of the tariff on medical books, surgical instruments, and drugs. As the Neurological Society contains a large number of believers in tariff reduction, their action must have been dictated by the best interests of the profession. It is easy to see on what grounds they opposed this resolution, originally offered as a piece of buncombe merely. While a tax remains on the raw material the removal of the tariff on instruments discriminates against the American instrument-maker, and must ultimately raise the price of instruments. Furthermore, under existing circumstances, a surgeon who desires an instrument can have it made by a maker at his door. If the tariff on instruments be swept away without removing the tariff on raw material, the instrument-maker's trade is destroyed, and the surgeon must import his instruments. The fact that the members of the New York Society are greater importers of books and instruments than those of the Georgia Medical Society, renders their action peculiarly significant.—*Medical Standard*.

As off-setting this action of the New York Neurological Society, the Medical Society of the County of New York passed resolutions urging upon Congress the repeal of the import duty on

medicines, medical and surgical appliances, and everything used in the treatment and diagnosis of disease. Attention was called to this action of the Medical Society of the County of New York in *THE JOURNAL* of April 7, though the *Medical Standard* seems to have found it convenient to overlook what the larger and more important Society, composed of general practitioners as well as specialists, has done. While the *Standard* claims that it is easy to see on what grounds the Neurological Society opposed the resolution of the Georgia State Medical Society, it, however, has failed to see what is so visible. The N. Y. Neurological Society took the ground, when it refused to endorse the resolutions of the Georgia Society, that the charges against native instrument-makers were too intemperate and sweeping. The Neurological Society said nothing about "discrimination against the American instrument-maker." Nor did the Neurological Society advance the entirely original and very unique opinion that the removal of the tariff on instruments would "ultimately raise the price of instruments."

When the *Medical Standard* says that the resolutions of the Georgia Medical Society were "originally offered as a piece of buncombe merely," it offers a gratuitous, unmerited, and entirely uncalled for insult to a scientific body of gentlemen whose time and lives are being spent in the interests of humanity. As medical men what have we to do with the instrument-makers' trade as compared with the health, comfort, and lives of sick people? Admitting that the members of the Neurological Society import more books and instruments than those of the Georgia Medical Society, do they import more than the members of the New York County Medical Society? Again, if the action of the Neurological Society "must have been dictated by the best interests of the profession," why did the members reject that portion of the resolutions referring to books and drugs, because the charges against instrument-makers were too intemperate and sweeping? Instrument-makers do not import drugs and books.

In this connection we beg to call attention to the following, from the *Medical Record* of July 28: In a speech on tariff reform delivered by Hon. Ashbel P. Fitch, of New York, a letter was read from a New York pathologist, in which he said, among other things: "For my microscope I sent to Jena, where are made the best instruments for

my work. At the factory it cost \$94; to get it out of the custom-house 40 per cent. more. Later I sent for an oil immersion lens, and paid \$80 at the factory, 40 per cent. more at the custom-house. Hermann Katsch, of Berlin, makes an instrument called a microtome, for cutting infinitely thin sections or shavings from the surface of a piece of an organ of the body, hardened in alcohol. Herr Katsch is the only man in the world who makes this particular variety of the instrument. To prepare a section thin enough for careful study under the high powers of the microscope this mechanism is necessary. To get this microtome from the custom-house I had to wait two weeks and pay a duty of 40 per cent. on its factory price. The celebrated Dr. Koch, of Berlin, published a report of the cholera commission, conducted under the auspices of the Government. At most, twenty men in this country could require this work, and they must needs pay 25 per cent. duty to get it from the custom-house after paying its publisher's price and freight.¹ What use could this report be to these scientists? To aid them in maturing methods of recognizing the disease when it appeared on shipboard in our harbors; to devise means to suppress it; to protect the country. It was to the expert work of one such scientist that the city of New York must give its gratitude that a certain steamship just developing cholera among its steerage passengers was detained at quarantine and the city escaped overwhelming infection. For Koch's report he paid 25 per cent. duty, and never received anything from the city or Government. When we look up from our laboratory tables, microscopes, microtomes, and alcohol—taxed to suffocation—and read in the papers of the United States Treasury filled to suffocation, we reflect that our scientific work takes much time, brings no money return, increases our outgoes, and has not even the encouragement of the Government nor laity."

THE TREATMENT BY EXCISION OF MASSES OF SCROFULOUS GLANDS.

While scrofulous glands do not, as a rule, attain a large size, and generally suppurate within reasonable limits as to dimensions, discharging externally either spontaneously or from surgical interference, they occasionally continue to grow,

become the seats of deposits, infect one another, and gradually increase in size until they form large masses, of a pound or more in weight. These large masses interfere with the circulation, and by pressure on the trachea sometimes also with respiration. When left to nature these cases tend to a fatal termination, and the only method of dealing with them satisfactorily, says Mr. WM. KNIGHT TREVES, or with benefit to the patient, is by excision. "For many years," he says, "I left such cases alone, trying for months, and even years, every drug treatment that has ever been recommended, without in any instance, witnessing a favorable result. In fact, anyone who has seen a number of these glands after they have been excised and cut open will readily appreciate the futility of drugs in such cases."

In the *Lancet* of July 21, Mr. Treves records 9 cases of enlarged and indurated glands treated by excision, and with good results in all the cases. Some of the cases had been going on for six, seven, or eight years, and had attained considerable size. Since there is a uniform want of success in the treatment of such enlarged glands by any other than surgical measures, is it not best that glandular swellings be treated as any other tumors or morbid growths, and be excised or scooped if found to be not amenable to other treatment within a reasonable time? A large proportion of these glands, and perhaps all of them in a given case are found to contain masses of caseated material; these masses are extravascular, are thrown out from the tissues, and are no more likely to be affected by drugs than a loose sequestrum, says Mr. Treves. He has tried the plan of excising such portions as were softening, and scooping out the contents, but this plan was found to be no better than the expectant one, and entailed a number of openings, a number of suppurating cavities that could not readily contract and heal on account of their surroundings and condition. It has been found, too, that after excising and scooping some of the glands, others that have not previously softened gradually break down, the cellular tissue inflames and becomes brawny, hectic continues, and the patient may die, worn out by the chronic blood-poisoning or from pulmonary or other complications.

For enlargements of moderate size scooping with good drainage may answer very well, but not for the cases of very large glands. Limited cooperation

¹ Amounting in all to \$11.00.—Editor THE JOURNAL.

may be combined with excision in some cases, as when after excising a mass, a broken-down gland may be found deeply and immovably fixed; this may be advantageously scooped. The large masses generally extend into the deeper parts of the neck, lying under the sterno-mastoid and on the deep vessels. In many cases the capsules of these glands are dense and tough, they lie deeply among the vessels, and to incise them for the purpose of scooping without previously exposing them by dissection is a more dangerous procedure than to remove them. The deep glands seldom approach the surface by suppuration. When left alone the best that can be hoped for is that they may undergo calcareous degeneration. But meanwhile the patient is kept in bad health, and the glands may extend and cause other and more serious complications. At the Margate Infirmary Mr. Treves has excised such glandular swellings for many years, and without meeting a fatal result. Their removal requires time, care and patience, but is not very difficult.

As regards the operation, Mr. Treves gives the following useful hints: The entire removal should be effected by dissection alone; no directors, handles of scalpels, or fingers should be used to separate the glands from the surrounding cellular tissue. Cut down on the surface of the mass, dissecting the cellular tissue as closely off the capsule as a nerve is cleaned in the dissecting room. Cut always on the capsule, and never allow the knife to stray from its surface. When sufficient of the anterior surface is exposed, pass a thick thread through the gland, draw it gently forward, and, continuing the dissection, get gradually to the back of the gland, removing thus portions of the mass at a time, each portion comprising perhaps one gland, perhaps several closely connected with each other. In this way the mass is gradually removed. If the plan of cutting on the capsule is strictly adhered to, it is not easy to divide any vessel of importance without doing so intentionally; whilst, if it is not followed, the jugular vein will probably be incised, as the deep glands lie along and are more or less adherent to its sheath. I have several times had to divide the external jugular vein and twice the sterno-mastoid muscle, but as a rule, the glands can be pushed or pulled from underneath this muscle. In none of the cases has there been any serious hæmorrhage, and all the

cases operated on have recovered. In one of the cases I accidentally opened the internal jugular vein; it was tied above, below, and at the point of incision, and no evil result followed.

"As regards treatment of the wound, anything like retention of blood, serous oozing, or discharge is attended with such serious consequences that latterly I have not ventured to suture the skin flaps, except, perhaps, a single stitch to keep them in proper line. If the flaps are sewn together, hollows must be left underneath in the space the gland tumor has come from. I have also found irritation set up by drainage tubes. I have preferred, therefore, to let the flaps adapt themselves to the tissues underneath, supporting them by pads of antiseptic cotton. Strict antiseptic precautions are used in the dressings. The patient, when put to bed, has his head and neck fixed by sand-bags; he is not allowed to move or talk, and is fed entirely on liquid nourishment so as to avoid the movements of mastication. I have found, as might have been expected, that the tissues of the neck have great healing power, but are equally prone to inflammation from the irritation of tubes or from the slightest obstruction to the free exit of discharge. In fact, it is a part which is powerful alike for good or for evil. A drainage tube may safely and with advantage be passed into the hollow capsule of a gland after scooping, but it does not rest easily if laid among the deep cellular tissue of the neck."

PRACTICAL ASPECTS OF DISINFECTION.

Practical disinfection is a subject to which much attention is given by European city health authorities. In America, while considerable attention has been given to practical disinfection in some places, there is far too little practical work done. In the minds of many people disinfection means only the placing of Condy's Fluid, or of carbolic acid solution or powder about the rooms in saucers, or sprinkling deodorants about the place to be disinfected. According as we wish to secure disinfection of infected clothing or bedding, to render infectious discharges harmless, or to purify the interior of an infected room, we must select a different method of disinfection. DR. D. S. DAVIES, Medical Officer of the City and County and Port of Bristol, has recently given some useful advice on the practical aspects of disinfection,

in a paper published in the *Bristol Medico-Chirurgical Journal*, June, 1888.

For the disinfection of infected clothing or bedding, superheated steam is at once expeditious and reliable. The apparatus used by the Bristol Sanitary Authority is a steam disinfector, with an internal capacity large enough to contain any sized mattress, and is surrounded by a steam jacket, which admits of superheating and thus drying the steam in the central chamber. Steam is supplied from a separate boiler. It takes only about an hour to get the machine into working order, and a roomful of bedding and clothing can be disinfected in another hour. The machine works so rapidly that more than 10,000 articles have been disinfected thoroughly during the first three months of 1888; with the two gas-heated dry-air disinfectors in use in Bristol previous to 1887 this would have been impossible.

Assuming that home-nursing of smallpox is inadmissible under ordinary circumstances, how should the infected linen be dealt with during the contact of a sick case at home—say one of scarlatina? The linen need only be boiled to ensure complete disinfection. But as a rule it cannot be boiled immediately, and while it is awaiting this it should be steeped either in a solution of corrosive sublimate, 1:1000, or in carbolic acid solution, 2 per cent., or thymol, 1:1000. The articles should be kept continuously wet until placed in the boiling water. Other than this no other process can be carried out at home except destruction by fire. Fumigation by sulphur or chlorine vapor, says Dr. Davies, is worse than inefficient, because it tends to promote a false sense of security.

When infectious excretions or discharges are to be dealt with the use of chemical disinfectants in solution is especially indicated. It is particularly necessary in such cases that all discharges be at once received into, well mixed with, and covered by chemicals of sufficient strength. Probably the most suitable solution is an equal bulk of corrosive sublimate solution, 1:1000. After this the discharges may be disposed of as usual.

While an infectious disease continues in a house all drain and waste pipes should be kept flushed with chemicals; but such chemicals should not be trusted to cover or remove drain-smells in a house or in the street. These smells point to defective construction, and reconstruction alone will suffice to remove the danger. While the public sewers

should be so constructed as to carry off the sewage immediately to a safe point of discharge, and thus prevent putrefaction, it will be useful in time of epidemic to disinfect them systematically with chemicals.

Gaseous disinfection, which is generally most convenient for the disinfection of room-spaces, Dr. Davies has found unsatisfactory as to results. Chlorine and bromine, while more effectual than sulphurous acid, can be relied upon to destroy fully-exposed organisms only, and to secure full efficiency the air should be simultaneously saturated with watery vapor. "Dependence upon these gaseous agents for the disinfection of clothes, blankets, and similar articles is obviously fraught with extreme danger; and yet in many populous districts the local authorities responsible for the public health have no more certain means of disinfecting such articles. When we consider that the desquamative periods of many infectious diseases, notably smallpox and scarlet fever, are periods of extreme danger, during which infective material is given off with the dried epithelial scales in a readily portable form, and during which bedding and clothes become loaded with such infectious particles; and when we further remember that this desquamation of infectious particles takes place similarly in the mildest as in the most severe cases, it becomes at once obvious that efficient means for disinfection of such articles by hot air or steam is a first necessity, and that where such efficient means are not available, contagion is likely to be largely carried by means of "fomites"—a fact that especially applies in cases where one of these diseases has been nursed for any length of time at home." Dr. Davies has now discarded chlorine on account of its very destructive action, and with sulphur for disinfecting empty room-spaces he has had uniform success. The room should be made as air-tight as possible, a large proportion of sulphur should be burned, and the operation should be continued for some time. Thorough scrubbing and ventilation are then secured, and if the patient has been nursed at home, the rooms are, when possible, re-plastered and re-papered.

It should be remembered also that in the desquamative diseases inunction with vaseline or oil, to which camphor, carbolic acid or thymol may be added, is an important measure, and if the surface of the patient's body be kept constantly moist

in this manner there is much less likelihood of contamination of the air by infectious particles. Or a wet sheet, saturated and kept moist with carbolic acid solution, preferably mixed with glycerine, may be used in such cases.

REFLEXES FROM INTESTINAL IRRITATION.

There are few subjects in medicine more interesting than the study of abnormal reflexes. Some authors have gone so far as to deny that there is any such thing as paralysis due to reflex mechanism; that the cases of paralysis of which amaurosis from affections of the fifth nerve, and paralysis of the orbital nerve from like cause, are examples, may be explained without reflex mechanism; and that there is no true conception of the manner in which reflex paralysis is brought about, unless we understand that it is produced by inhibitory influence, and that reflex paralysis, if it have any meaning, must be inhibitory paralysis. They that go so far as this deny the necessity of admitting inhibitory paralysis.

Among the various causes of reflex disturbances intestinal irritation is known to play an important part. Cases of paralysis of the arm from gingival and intestinal irritation, of hemiplegia from intestinal irritation, of aphasia from the same cause, and of other disturbances from irritation of the alimentary tract, while not common, are by no means unknown. Such cases have been reported by Kennedy, Gomez Torres, Fränkel, Corbett, McKendrick, Moll, Molard, Fox, Eggleston and others. McKendrick's case was that of a woman that had suffered for seven months from a partial paralysis of the lower limbs; she passed a tape-worm nearly twenty-two feet long, and within four days had completely regained the use of her limbs. Fuller reported the case of a boy who had paralysis first of the right and then of the left leg, and recovered after a dose of santonine, which brought away a large number of dead lumbricoid worms. Moll's case was that of a woman who suffered for three months from paralysis of the upper extremities, and recovered after the expulsion of a tape-worm. Eggleston's case was that of a case of reflex paraplegia and aphasia from tape-worm, the child recovering after the expulsion of the worm.

From a record of cases carefully tabulated and extending over a number of years, Mr. Jabez

Hogg finds that strabismus in young children is more frequently due to the irritation of intestinal worms than is generally supposed, and he reports (*British Medical Journal*, July 21, 1888) a case of amaurosis and strabismus from *ascaris lumbricoides*. It is certainly very uncommon to find reflex amaurosis and strabismus associated in the same person, and arising from the same cause—the presence of worms in the intestines. An equally interesting feature in this case was the presence in the patient, a little girl of barely three years, of three kinds of entozoa: oxyurides, tænia, and *ascaris lumbricoides*, for it has been held that these three kinds of worms will not exist together. Mr. Hogg removed the parasites by means of anthelmintics, beginning with scammony and jalap, which brought away a large number of ascarides. Filix mas removed the tape-worm, and santonin followed by castor oil brought away several large lumbrici. The patient began to recover her sight, the strabismus has entirely disappeared, and at the time of the report the general health, which had been greatly impaired, was much changed for the better.

EDITORIAL NOTES.

AN ARMY MEDICAL BOARD will be convened in New York City, New York, October 1, 1888, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth, place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits; testimonials as to professional standing, from the Professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the Board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

SUPPOSED ICE-CREAM POISONING.—At the annual banquet of the alumni of Marietta College, Ohio, held in the latter part of June, a number of

persons were made ill after eating ice-cream. Five persons have since died, the last one on August 6, and another is still dangerously ill. It is said that the cause of the sickness will probably be investigated, though it seems rather late to begin now.

BULGARIA, according to Dr. J. Bradel, of Sophia, has now a well organized sanitary service. There is one chemical laboratory, in which the work is almost exclusively medico-legal and sanitary. The medical officers of health have, among other duties, that of inspecting animals intended for food, and of investigating any complaint against a seller of food articles.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its first annual meeting at Birmingham, Ala., on September 11, 12, and 13, 1888. The programme of the meeting may be found in the department of miscellaneous items in this week's issue.

THE AMERICAN ASSOCIATION OF OBSTRETRICIANS AND GYNÉCOLOGISTS will hold its first annual meeting at Washington, D. C., on Sept. 18, 19, and 20, 1888. The programme for the meeting will be found in another department.

AMERICAN MEDICAL ASSOCIATION.

Report of the Sub-Committee on Infant Feeding,

Made at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

Your Sub-Committee on Infant Feeding respectfully reports that it has only had the subject under consideration for about two months, and during this time it has opened correspondence with some of the leading authorities both in this country and in Europe upon the very important questions submitted to it, especially with reference to the proper diet of infants. Though not prepared to make a final report upon the subject at present, it believes that some facts have been elicited which are valuable; and which are of sufficient interest to bring before this Association.

Thus far, replies have been received from Dr. Eustace Smith, of London; Dr. J. Lewis Smith, of New York; Dr. Victor C. Vaughan, of Ann Arbor, Mich.; Dr. Geo. H. Rohé, of Baltimore; Dr. F. Forchhiemer, of Cincinnati; and others, to whom we desire to return thanks for their assistance and courtesy. (The correspondence and re-

plies to queries submitted are appended to this report.)

The leading facts thus far may be very briefly stated as follows:

1. In the case of an infant, or a child under ten months of age, deprived of breast-milk, the artificial substitute provided should be made to correspond with human milk as closely as possible, both in its chemical constitution and its physical characters.

2. Fresh, unadulterated cow's milk, when properly prepared, is an acceptable substitute for cow's milk. But since the casein of cow's milk coagulates in a heavy, dense mass, while breast-milk curd is light and flocculent, some expedient must be resorted to in order to make the former resemble the latter, so that the digestive powers of the infant shall not be unduly taxed. The casein of cow's milk, according to Dr. Eustace Smith, as the rule, traverses the infant's alimentary tract and may be found unchanged in the faecal discharges. It is, therefore, a constant source of irritation, and often gives rise to diarrhoea and enterocolitis. One of the most decided advances in dietetics in modern times, is the preparation of cow's milk with the aid of digestive agents, as in the method recommended by Professor Frankland. In this method the casein of a portion of the milk is first peptonized by fresh calf's rennet, and to this is added a portion of fresh milk, after heat has been applied to check the process and to prevent complete predigestion; some milk sugar is finally added, and thus a mixture is obtained which closely approximates human milk in its chemical composition. It has, moreover, been found to serve as an efficient substitute where the mother's milk is of poor quality, is inadequate in quantity, or is entirely wanting. The special feature of this method is the peptonizing of only a part of the casein, with the employment of heat at a certain stage to arrest the process so that the food shall not be completely digested. The addition of the carbo-hydrate (milk sugar, in this case) is necessary, in order that the food shall closely resemble human milk. The employment of stale, foul smelling, partially decomposed digestive ferments, for the purpose of preparing cow's milk for infant's food is condemned. The necessary skill and intelligence required to insure uniformity of results for the extemporaneous peptonizing of milk is rarely to be found in the household, and where this process is adopted, the experiment often turns out to be unfortunate and injurious to the child.

3. As a rule, raw starch is inadmissible in the diet of young infants, because the digestive powers of the infant are rarely sufficiently active to convert crude starch into a soluble form. The plan advocated by some, of adding starch to the milk in order to mechanically break up the curd is unphysiological and very objectionable. The

products of the complete digestion of starch are glucose and saccharose (maltose), and these, in various forms, have been recommended to be used as additions to the milk under the name of "Liebig foods." When in excess, these substances cause diarrhoea, and when administered alone do not sufficiently nourish the child. Dr. J. Lewis Smith speaks favorably of dextrine, which is a partially digested starch, as a good substitute for glucose and saccharose in artificial foods. The fact cannot be too strongly insisted upon, which is taught both by clinical experience and by physiological investigation, that the food of either infants or adults, except in special emergencies, should never be fully predigested, for fear of permanently weakening or destroying the digestive functions of the stomach.

4. A great part of the large mortality of infants in all our cities is due to the bad quality of the milk supply, particularly that going to the poorer classes. Professor Vaughan declares that many deaths from so-called cholera infantum are really caused by milk containing tyrotoxin. Authorities are almost unanimous upon the point that in large cities, at least during hot weather, all milk for the nursing bottle should be boiled several times a day in order to destroy ferment germs. It is better, at such time, that the food should be freshly prepared for each feeding. In some cases, owing to the variability in the quality of the milk-supply, it may be advisable to resort, for a short time, to condensed or to evaporated milk; in either case diluting and adding cream, or an equivalent soluble carbohydrate, in order to make an artificial breast-milk. Desiccated partly peptonized milk, in the form of a milk food, containing partly converted starch (soluble starch, dextrine, and a small portion of lactose) is a convenient (and when well made, a very efficient) substitute for the mother's milk.

5. Where the child is a premature birth, or is feeble from other causes, as great care should be observed in preparing its food as in prescribing its medicine. Experience has demonstrated that success in infant-feeding is dependent upon the ability to individualize the patient, and to select the proper food for each case. For very delicate infants the mother's milk is often found not only inadequate to properly nourish the child, but also positively injurious. This is generally admitted where some obvious dyscrasia exists, as the tuberculous or syphilitic. It is a fact that in such feeble infants artificial mixtures can be made which will agree with the weak digestive functions and satisfactorily nourish the child.

In conclusion, your Sub-Committee would direct attention to the remote and far-reaching effects of the mal-nutrition resulting from improper feeding in early life, to be witnessed in chronic invalidism or in premature death of the individual, and to the inevitable physical degeneracy

threatening the race where the principles of infant dietetics are neglected. In view of the importance of the subject, the Sub-Committee respectfully asks to be continued in order to further investigate the matter, and to report to the next meeting.

All of which is respectfully submitted.

FRANK WOODBURY, M.D.,

Chairman of Sub-Committee on Infant Feeding.

Question 1.—Are malt sugar foods liable to produce abnormal fermentation in the stomach, especially with infants? Do they often do so? Can you assign the reason in cases where it occurs? Is maltose in excess in the food of infants objectionable, and why?

I have never seen any signs of fermentation which I could attribute to the influence of maltose. It is true that all infants cannot digest maltose or malted foods, but even in these cases I have never seen reason to suspect the difficulty to be due to the fermentation of maltose. (Eustace Smith.)

I believe that all sugar in excess of that normally contained in mother's milk is liable to undergo fermentation before it can be absorbed, and hence, by interfering with the normal decomposition of the bile in the prima via, hinders absorption of fats and possibly of peptones, and so interferes with nutrition. (Rohé.)

It depends entirely upon what form the malt sugar is administered in. In general it must be said of the carbohydrates that they are best administered to infants in the form of glucoses. Maltose is not a glucose and ought not to be administered to such infants, in whom the salivary and pancreatic functions have not been established. In regard to the sugar ferment of the stomach nothing is known as far as relates to infants. (Uffelmann's case is the only one on record, and that was in a boy.) (Forchheimer.)

Yes. Malt sugar undergoes fermentative changes very readily and does harm often when used as an ingredient of infants' foods, on account of its fermentation. (Vaughan.)

Maltose can be assimilated by the infant only in very small quantity. When administered in excess it gives rise to diarrhoea, probably owing to its fermentation. It is also objectionable because it starves the tissues, while it increases the fat, giving an appearance of plumpness and health to the infant which, however, is delusive, as seen by its feeble powers of resistance to disease. (Woodbury.)

Question 2.—If the Liebig or malt-sugar foods are likely to ferment in the stomach before assimilation commences, is it advisable to add them to cow's milk, in which the resulting acidity tends to transform the casein into indigestible curds?

I do not think it advisable to add maltose to cow's milk in greater quantity than would be necessary to raise the proportion of sugar in cow's

milk to make it correspond in this respect to human milk. For this purpose, I think pure cane-sugar is preferable to preparations of uncertain composition. (Rohé.)

In Liebig's food the starch is converted to dextrose, as well as into maltose. (Forchheimer.)

It is not advisable to add malt-sugar to cow's milk which is to be used for infants' food. (Vaughan.)

As ordinarily practiced, the feeding of children with Liebig's foods with (milkman's) cow's milk is not advisable, and often distinctly injurious. (Woodbury.)

Questions 3 and 4.—Should not dextrine be preferred to malt sugar for ingestion in the case of infants, and if so, for what reasons? Can dextrine ferment before it is changed to sugar?

With regard to the first four questions relating to the fermentability of malt extract, I think they should be addressed more appropriately to the physiological chemist than to the physician. (Eustace Smith.)

I have no opinions to offer upon these points. I have seen it stated somewhere that dextrine does not ferment before it is changed into sugar, but this is not remarkable, since dextrine is simply one of the stages of the process by which starch is converted into sugar, or, carrying the process further, into alcohol and acetic acid. But I can readily understand that it may be advantageous to have something for the amylolytic ferments present in the saliva and pancreatic secretions of even quite young children to act upon, rather than that these ferments should be mingled with the food in the stomach and intestinal canal, without an opportunity of undergoing their physiological decomposition. (Rohé.)

Dextrine must first be converted into dextrose before it can be utilized by the economy. Dextrine, which is a starch, cannot be fermented until converted to dextrose (grape sugar). (Forchheimer.)

Dextrine is preferable to malt sugar, because it (the dextrine) does not ferment so readily. I do not think that dextrine can undergo fermentation before it is converted into sugar. (Vaughan.)

The chemistry of the different forms of glucose is still in an unsettled condition. I am opposed to an excess of any form of grape-sugar in the diet of infants. Dextrine is partially digested starch, and is readily converted into dextrose by the digestive fluids. It is preferable to maltose because it affords an opportunity for physiological activity of the digestive fluids containing ptyaline (salivary and pancreatic secretions, succus entericus). (Woodbury.)

Question 5.—Will any of the ordinary artificial "infant foods" now in the market thoroughly nourish the child without the addition of cow's milk?

No artificial food will efficiently nourish an in-

fant unless cow's milk be added; for all preserved foods want the living antiscorbutic principle, which is only to be found in fresh foods. In other respects many of them, such as the desiccated milk foods, contain in themselves, as far as I know, all the elements of nutrition. (Eustace Smith.)

None of those foods which I have studied, either theoretically or practically, seem to me to fulfil the indications. It seems strange, however, that, with the large amount of definite knowledge we possess upon the physiology of digestion, chemists have hitherto failed in giving physicians a trustworthy preparation based upon physiological principles. (Rohé.)

Yes, provided you include milk foods, as ———'s or ———'s. (Forchheimer.)

Yes, there are one or two. (Vaughan.)

I think that a good milk food answers the requirements very acceptably. (Woodbury.)

Question 6.—Do the ordinary so-called infant foods add any constituent to cow's milk which it does not contain in sufficient quantity already?

I do not think that the ordinary infant's foods add any constituents to cow's milk which it does not already contain in sufficient quantity, but many of them by presenting certain of the constituent in a more digestible form, may contribute greatly to the nutrition of the infant. For instance, few children digest a sufficient quantity of the curd of cow's milk. The greater part of the casein in the shape of a dense tough mass of cheese, passes almost unchanged by the bowels. Where this is the case, the child runs a great risk of being under-nourished unless he assimilates some substitute for the missing curd. This may be supplied by the addition of a well-selected infant's food. (Eustace Smith.)

None, in my opinion, except sugar. (Rohé.)

Yes. (Forchheimer.)

Yes, the best add dextrine. (Vaughan.)

If the cow's milk is diluted, some of the foods do, by making up the deficiency of carbo-hydrates or hydro-carbons. (Woodbury.)

Question 7.—Should not all the infant foods that are required to be given with cow's milk of ordinary quality be rated in value as sugar only?

I cannot answer. (Eustace Smith.)

Yes, because any other constituents are unnecessary and probably injurious. (Rohé.)

No, salts and some sugar. (Forchheimer.)

Yes. (Vaughan.)

There are many that are inferior in food value to plain sugar. (Woodbury.)

Question 8.—Do any of the "milk foods" contain more than 15 per cent. of solid constituent of cow's milk?

I cannot answer. (Eustace Smith.)

I have before me, as I write, a preparation for which the claim is made that it contains 50 per

cent. of cow's milk. Now, as cow's milk contains only 12 per cent. of total solids, there are in this special preparation only 6 per cent. of milk solids. Another preparation, in my hands at this moment, is said (on the label) to contain 50 per cent. of the solid constituents of the milk; the other, 50 per cent. is said to consist of dextrine and soluble starch. I have had no practical experience with this preparation. However, if the claim made for it is true, this would answer the question in the affirmative. (Rohé.)

Yes, if I understand the question correctly. (Forchheimer.)

Yes. (Vaughan.)

I do not know. (Woodbury.)

Question 9.—Recognizing that the casein of breast-milk is partially a peptone, must not cow's milk, with its tough casein, be illy adapted to the rearing of infants whose digestion is feeble in comparison with that of the calf?

I think the cow's milk should be specially prepared for the infant's stomach, whether by predigestion or otherwise. (Eustace Smith.)

In practice I have found that many infants can digest the casein of cow's milk, but this presupposes intelligent feeding which is not always attainable. Such children, however, much oftener suffer from digestive derangement than nursed infants (Rohé.)

I do not recognize the casein of breast-milk "as partially a peptone." Human milk does contain a small quantity of peptones, but we are far from certain that they are derived from the casein. (Forchheimer.)

Yes. (Vaughan.)

Yes, especially if the infants are at all delicate. (Woodbury.)

Question 10.—In view of the difference in the character of the casein of human milk and cow's milk, is it not advisable to have the cow's milk partially pre-digested, or sufficiently so as to render it like the casein of human milk and as readily digestible by the infant?

Cow's milk should be especially prepared for the infant's stomach, either by predigestion or otherwise. (Eustace Smith.)

If this could be attained in practice, I think it would be a great advance in the art of nourishing children deprived of breast-milk. The preparation referred to (under 8) is said to be partly so digested. The claim deserves investigation by experts. (Rohé.)

If cow-casein could be so changed as to be identical in all its properties with human casein, the problem of artificial feeding would be almost solved. (Forchheimer.)

Yes, this is a very important point. (Vaughan.)

This is a consummation most devoutly to be wished. (Woodbury.)

Question 11.—When farinaceous foods are added to cow's milk for the purpose of preventing

the hard coagulation of casein by their physical action, do they not add another indigestible element, and is not their value for the purpose dependent upon their insoluble or indigestible character?

Cow's milk should be especially prepared for the infant stomach (answer to previous question). If this be attempted by the addition of flour or similar starchy compound, I think the farinaceous addition contributes little to the nutrition of the infant. (Eustace Smith.)

I think the practice objectionable at least before the child has reached the 10th month of age. (Rohé.)

It depends entirely upon the age of the infant. (Forchheimer.)

Yes. (Vaughan.)

Yes, the object of adding corn-starch or similar substances to cow's milk is avowedly to make the curd less cohesive, and not to add any nutritive element to the food. (Woodbury.)

Question 12.—Is the peptonizing of cow's milk practical in the household, and can it be uniformly and properly performed by the nurse or mother, or does it require the supervision of an experienced chemist?

The peptonizing of cow's milk is quite practicable in the nursery; the ordinary process does not digest all the curd, but still enough for all practical purposes. (Eustace Smith.)

In a few cases I have been able to make mothers understand the process of peptonizing milk, but in the majority of instances my efforts have not been rewarded by success. The proceeding is so troublesome that mothers get careless, and nurses—well, the people who need nurses most are generally unable to employ them. (Rohé.)

No. The method most commonly used (—'s) is bad; and it is the only one which can be carried out by the intelligent (!) attendant. (Forchheimer.)

It should be done under the direction of a competent chemist. Nurses will not do it as it should be done. (Vaughan.)

I consider it impracticable. The women intelligent enough to conduct the process properly are engaged in teaching in some college, and if married, rarely, if ever, have children. (Woodbury.)

Question 13.—For infant-feeding should the casein of cow's milk be wholly pre-digested, or fully peptonized, and if not, why?

I think it objectionable to relieve healthy organs of any of their duties; hence, I object, in the interest of the future health of the individual, to wholly peptonize, pre-emulsify, or prepancreatize any food. While there may be no exact observations on record, I think a stomach whose peptic glands are not called into use might get out of the habit of digesting altogether, and so

be of no more use to the individual than a bag of rubber which had the power of rythmical contraction. (Rohé.)

I think that peptones, not peptonized milk, can be used to great advantage in proper cases. Peptonized milk is out of the question, as we have no method by which this can be obtained with accuracy. The use of pancreatic ferments in my opinion is fallacious, as it introduces into the intestinal tract, especially very young ones, products that are decidedly dangerous in their actions. I have made some experiments with the process which has pushed me to the conclusion that my reasoning is correct. I have seen infants under 2 months do well on cow's milk when they would have died with mixture. One series of experiments was conducted upon foundlings, half of which were given milk undigested and the other half digested. The result was that those on milk did well, and the other half had to return to milk, otherwise they would have died. Besides, tryptic and stomachic digestion do not agree together. (Forchheimer.)

The casein should not be wholly digested. It is unscientific to feed a child upon food, the proteids of which are wholly digested. The stomach must have some work to do, or it will become enfeebled by disease. (Vaughan.)

It is unphysiological. (Woodbury.)

Question 14.—Since pancreatine is itself subject to putrefaction, should it not therefore be used for the purpose of digesting milk when freshly made? Is the offensive odor of some pancreatic preparations that are sold in the market due to impurity or decomposition? Is there danger that such putrefactive changes are likely to impart deleterious qualities to the milk?

The pancreatine should, of course, be used before it has putrified and lost its properties. (Eustace Smith.)

I think it highly probable that ptomaines may result from the decomposition of pancreatic ferments. I must confess, however, that I have no observations upon this point beyond the violent appeal to my olfactories made by some pancreatic preparations. (Rohé.)

Whatever has been said about —'s is true of all pancreatic products. (Forchheimer.)

Yes, the offensive odor comes principally, I think, from impurities; though even a pure preparation, if it could be obtained, would probably decompose. (Vaughan.)

Unless nastiness is a recommendation, most of the commercial digestive preparations should be excluded from the household. (Woodbury.)

Question 15.—What proportion of cow's milk found in our large cities during the summer months is in a proper condition to feed children? Is not the cause of the great mortality at this season largely due to fermentative changes taking place in the milk before it reaches the consumer?

In large cities during the summer, cow's milk brought from a distance is, no doubt, often far from fresh and therefore ill-adapted to further healthy nutrition, if not actually injurious to the recipient. (Eustace Smith.)

Sanitarians are agreed that the methods of milk supply in large cities urgently demand reform. There is no doubt that during the hot weather of summer, decomposition sometimes occurs in milk which renders the latter violently poisonous. The outbreaks of tyrotoxicon poisoning so well studied during the last two years by Professor Vaughan, Drs. Newton, Shippen, Wallace, and Professor Shearer, of Iowa, prove this. Added to this danger is that of allowing milk from tuberculous cows (and nearly all city cows are tuberculous) to be sold. I have advocated the inspection of milk by qualified officials in this city, (Baltimore,) but I am sanguine that such inspection would remove the most serious danger, which is not adulterated milk, but milk that is unwholesome or dangerous from other causes. (Rohé.)

I know of but three milk men in this city (Cincinnati) who supply milk which can be absolutely relied upon in summer. Yes. (Forchheimer.)

I think that poisonous milk is the cause of a large percent. of the mortality among children, especially among the poor classes of our large cities. It would be impossible to say what proportion of the milk supplied to the cities becomes unwholesome in the hands of the small retail dealer, and also after it has been sold to the poor, who have no means of keeping it at a low temperature and in a non-vitiated air. (Vaughan.)

To the dangers from adulteration with ditch water or that from infected pumps, we have the possibility of metallic poisoning from the cans. (See article relating to this subject by Dr. Geo. Hall, in the *Philadelphia Medical Times*. (Woodbury.)

Question 16.—What recent advancement has been made in foods for infants that is worthy of consideration in furnishing us with an artificial food at all analogous to, or approximating towards, human milk in composition and digestibility?

I have no personal knowledge of such advancement. (Rohé.)

None. The last was —, only applicable to individual cases, however. (Forchheimer.)

It is possible that such an advance has been made; the matter is still under trial before the profession. (Woodbury.)

I think that the addition of dextrine instead of sugar or starch to the milk solids, and the partial digestion of casein are important advances. (Vaughan.)

FOREIGN CORRESPONDENCE.

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*Dextrocardia—Conservative Cæsarean Section—
Tuberculosis Verrucosa Cutis—Syringomyelia—
Extirpation of the Initial Sclerosis and the Lym-
phatics in Syphilis.*

An interesting discussion on dextrocardia has recently taken place in the Imperial Royal Society of Physicians of Vienna. The impulse towards such an exchange of opinions, in which Prof. v. Bamberger and Prof. Kundrat took part, was given by the demonstration of a case of congenital dextrocardia by Dr. Gruss. The patient, a girl 29 years old, had suffered in her youth from measles and varicella; at the age of 14 years she was the subject of peritonitis. It was stated that at her birth her grandmother had felt the beat of the heart on the right side of the chest. Until the twentieth year of age the patient had suffered from dyspnoea, palpitations of the heart, and at present she invariably has a sensation of cold. On the percussion of the chest a clear sound was noticed all over the left side, whereas a dull percussion note was found to be present on the right side, commencing over the third rib and reaching as far as the liver; the pronounced dulness of percussion was moreover to be observed over an area which extended from the right sternal margin and approximately reached as far as the middle between the mamillary and the anterior axillary line. On auscultation two clear sounds could be heard anywhere, of which the first one was accompanied by a murmur, whereas the second sound was much accentuated. The cardiac murmur could also be noticed over both the carotid arteries; in the rest, the peripheral arteries were narrow and the pulse small, but synchronic with the action of the heart. The visceral organs had their normal position.

Dr. Gruss was led by this complex of symptoms to diagnose a condition of pure dextrocardia with transposition of the great blood-vessels and congenital stenosis of the pulmonary artery. The murmur mentioned before was, in his opinion, due to stenosis of the pulmonary artery.

Prof. v. Bamberger first wished to lay stress on the fact that dextrocardia *per se*, without a *situs viscerum inversus*, was to be met with in exceedingly rare cases. In the course of forty years he had observed twelve cases of *situs viscerum inversus*, but only three cases of pure dextrocardia. From the cases which had been gathered by Prof. v. Schrötter it became evident that in the great majority of conditions of dextrocardia, a congenital disease of the blood-vessels was also present. In one case which the lecturer had observed, there was surely no congenital disease of the

blood-vessels present, and the insufficiency of the mitral valve was derived from endocarditis after rheumatism.

Prof. v. Bamberger then discussed the case under consideration, which had a particular interest owing to the symptoms found on auscultation. The murmur which was heard was one characteristic of a stenosis, and the question now arose as to whether the conus arteriosus or the valves were stenosed? The stenoses of the conus arteriosus were exceedingly rare, and they were usually of a congenital origin, as they were due to a myocarditis during the foetal life. The stenoses of the valves, however, were very frequent and were to be met with in all the periods of life. In the case under consideration there was the question of a stenosis of the conus arteriosus, as the second sound was clear and sonorous, which was not to be met with in stenosis of the valves. The further question was as to whether the stenosis was present in the aorta or the pulmonary artery? The small pulse would be in favor of the admission of a stenosis of the aorta, but the fact that the second sound was clear and sonorous pointed to an increase of the blood pressure, which was not present in the case of stenosis. The small pulse, in spite of the augmented blood pressure in the aorta, was to be explained by the fact that the ductus Botalli had remained open in this case, and that a large portion of blood was thrown through it into the pulmonary artery.

Prof. v. Bamberger was not of the opinion that a transposition of the large blood-vessels was also present in this case. Such a condition could not, moreover, be at all diagnosed; it was only known from the pathological anatomy. When the arterial blood, in such a case, was thrown through the pulmonary artery into the lungs, and the venous blood into the aorta, the life of the respective individual was quite impossible. When a total transposition was present, when all the parts of the heart had an inverse position, no disturbance whatever resulted from such a condition.

Prof. Kundrat, professor of pathological anatomy, remarked that the opinions on the transposition of the large blood-vessels were not yet settled. He, therefore, wished to show two such cases and to discuss them at full length. The pure transposition of the heart was a very rare condition, and in such cases it was not the question of a simple dextrocardia, but these were cases in which the right part of the heart was situated on the left side, and the left part on the right one, hence quite the same conditions as in *transpositio viscerum totalis*. In such cases the apex of the heart was directed towards the right side, the pulmonary artery equally to the same side, and the aorta to the left one. The position of the apex of the normal heart on the left side was to be explained by the development of the cardiac tube (cardiac tract). No mechanical conditions whatever could

dislocate the heart out of this position; it was always dislocated *in toto*. If the apex of the heart were, in such a case, dislocated towards the right side, the heart would have to be cracked (nick), and a complete interruption of the circulation would be the result.

As to real dextrocardia, Prof. Kundrat had hitherto found it only in cases of monstrem duplex in which both the hearts were contained in one pericardium; furthermore, in the case of total transposition of the viscera. Dextrocardia was, however, also to be met with under other conditions, and such were reported by Brechet, G. St. Hilaire, Förster, and others, but the conditions respecting the blood-vessels were not discussed by any one. The dextrocardia was necessarily combined with abnormal conditions of the veins. As the atrium, which receives the large veins (the superior and inferior vena cava) was not normally situated, as its position was on the left side, the development of the venæ cavæ had also to be an abnormal one, and there were also other abnormalities in the development of the heart and the large blood-vessels. In one case of real dextrocardia, which had been observed by Prof. Kundrat, the aorta was inclined towards the right side and was much more developed in comparison with the pulmonary artery; the heart was, properly speaking, trilobular, as it had one ventricle and two defectively developed atria, which were separated from each other.

The dextrocardia could also be combined with a transposition of the large blood-vessels, the aorta, in such a case, having its direction towards the former and right side, the pulmonary artery towards the posterior and the left one. The statement that such a condition was inconsistent with the life of the individual, was not valid for all cases. By an abnormal direction of growing of the "septum ventriculorum," the abnormally situated trunks of the blood-vessels could be caused to discharge into the corresponding chambers of the heart; such a transposition was called a "corrected transposition." In most cases such a corrected transposition was, indeed, not observed, and this was the reason why most such individuals succumbed at an early period. In the case of real dextrocardia there were, usually, also other defective formations present, such as incomplete development of the septum, abnormalities in the size of the trunks of the blood-vessels, etc.

Prof. v. Bamberger replied that if Prof. Kundrat spoke of a corrected transposition of the blood-vessels, this was not the proper transposition, at least in the clinical sense.

Prof. Gustavus Braun brought forward before the same Society a woman, 37 years old, on whom he had, for the first time performed Cæsarean Section after the conservative method, owing to a relative indication. The patient had stated that eight days before her admission into the hospital the

amniotic liquid had already commenced to discharge freely. The uterus showed tetanic contractions. On measuring the pelvis, the following conditions were found to be present. The distance of both the "spinal anteroses" was 23 centimetres, that of the centre 28, and the distance between the trochanters 29 centimetres. The perineum was rigid, the vagina narrow, and the vaginal portion of the uterus measured 2 centimetres in length. The conjugata diagonalis had a length of 10 centimetres, and the conjugata vera from 8 to 8½ centimetres. The head of the fœtus could be felt through the uterine orifice. As the uterus was contracted to such a degree that the inferior uterine segment became exceedingly dilated, and the child was still living, death of the fœtus and rupture of the uterus was to be feared. The hope of saving the child, and the fact that a delivery *per vias naturales* was combined with danger of life for the mother, induced the lecturer to perform Cæsarean Section after the conservative method, which was performed in the usual way. For closing the uterus, silver sutures and sutures of sublimated catgut were availed of. The sutures were secured, and the serous membrane was separately united, so that the contracting uterus could not give rise to any disturbance. After the removal of the elastic band some blood still escaped, which was stopped by means of a few sero-muscular sutures. After *toilette* of the peritoneum and reposition of the uterus the abdominal wall was closed by means of eight hooks, a dress of iodoform gauze was applied and the fœtid discharge from the vagina was removed by lotions of a solution of thymol.

The course of the operation was normal, and the temperature only once reached 38.3° C. A living child was extracted which had a length of 50 centimetres, and the weight of which was 2,900 grams. The present examination showed that the uterus was quite movable and that no adhesion to the abdominal wall could be proven.

Prof. Braun remarked that for more than thirty years and in more than 200,000 cases of delivery in the obstetrical clinics of the Vienna General Hospital, the Cæsarean Section for a relative indication, had not been made even once. The reason for this conduct of the obstetricians was the fact that in the pre-antiseptic times one was not able to promise the mother that her life would be saved.

Docens Dr. Riehl showed a man who was affected with *tuberculosis verrucosa cutis*, the so-called inoculated tuberculosis of the skin. This affection had been in former times considered by the lecturer as being a local and harmless process. The case under consideration, however, showed that a general infection with tuberculosis could also be the result. The affection in this case had pervened owing to a slight lesion of the skin, a softening nodule developed there and others

ilar nodules came on the arm; the lymphatic glands became also affected, there was, moreover, a catarrh of the apices of the lungs and hæmoptysis. The primary affection of the finger was at present surrounded by warty excrescences of the skin; ulcerating nodules were to be found on the back of the hand, the fore- and upper-arm. These nodules corresponded to the *gommès scrophuleuses* of the French, and it was of a great interest to learn that a well pronounced *tuberculosis verrucosa cutis* could give origin to the development of such *gommès*. It was, moreover, to be remarked that in the scars of some of these nodules there were also other solid and isolated nodules which bore a great resemblance to the nodules in the case of lupus. The present case was, therefore, also an evidence for the connection between lupus and tuberculosis, which was still denied by many dermatologists.

Prof. Kahler, in an important paper which he read before the Society of German Physicians, at Prague, discussed the possibility of a more exact clinical diagnosis of syringomyelia. The lecture was also illustrated by a demonstration of several patients. He first directed the attention of the audience to a case observed by him in former years, in which the *post-mortem* examination confirmed the diagnose of syringomyelia in the cervical part of the spinal cord. The same complex of symptoms which had been present in that case was also, for the greatest part, to be found in the case which he now brought before the Society. The patient, a man, 26 years old, suffered for three years from emaciation and wasting disturbances on the hands. The affection first set in on the left side, and was then observed also on the right. No pains, but paræsthesias, and for the last time, also, disturbances of sensibility were present. For the last year particular trophic disturbances came on. They consisted in the formation of vesicles and ulcers, which first supervened over the skin of the right hand, and later on over the skin of the shoulders and upper-arms. The ulcers healed and hypertrophic and keloid scars remained behind. The muscular atrophy corresponded, as far as its intensity and its spread was concerned, to the type "*Aran-Duchenne*," and had hitherto remained confined only to the internal muscles of the hands. The patient, presented some symptoms on the part of the sympathetic nerve. These symptoms consisted in narrowing of the left eye-cleft and retraction of the eye-ball, as well as in narrowing of the left eye pupil. Prof. Kahler, in conformity with the German physicians, considered these symptoms as being essential for syringomyelia, and this was especially true of the ocular papillary symptoms which pointed to a participation of the centres of the sympathetic nerve in the cervical part of the spinal cord. When the disturbances of sensibility were for a long time the sole symp-

toms observed in such a case, this condition pointed to a preceding participation of the funiculi posteriosis of the spinal cord in the formation of the cavity in the matter of this organ. The lecturer then discussed the symptoms of differential diagnosis between the disease under consideration and the cervical myelitis, the compression of the cervical part of the spinal cord and the pachymeningitis cervicalis hypertrophica.

As to the anatomical basis of the syringomyelia, Prof. Kahler reminded the Society of the theory which had been established by Pick and himself, according to which the formation of the central cavity derived its origin from the dilated central canal of the spinal cord during the congenital life. The recent work of Schultze on the central glioma was, moreover to be taken into account.

Prof. Chiari delivered a lecture on syringomyelia from the anatomical point of view. He discussed a case of this affection of the spinal cord which he had recently examined, and in which the central long cavity in the spinal cord was to be looked upon as representing a chronic internal hydromelia produced by hyperplasia of the central glia-tissue and exudation into the central canal. The lecturer then passed over to the divergent opinions that exist in regard to the genesis of syringomyelia. Central and long cavities in the spinal cord of adults might be produced in a very different way, viz., by decomposition of a central glioma; secondly, owing to the persistence and further development of congenital abnormalities of the central canal; furthermore, by disturbances in the circulation of the spinal cord, or from myelitic softenings, lastly, they may be due to hydrocephalus internus, and as to the last explanation, Prof. Kahler thought that it had to be applied in the case he had mentioned before. In such a case there was a vegetation of the tissue of the ependyma and transudation from its blood-vessels into the central canal, which was possibly not pathological previously. The exact histological examination, and particularly the proof of the presence of the epithelial layer in the central cavities, was combined with the greatest difficulties. Prof. Chiari proposed to call all those cases in which there were central long cavities, and which were due to dilatation of the central canal, hydromelia interna, and to use the term syringomyelia only for those cases in which the formation of the cavity was surely in no connection with the central canal of the spinal cord. Such a condition was also to be met with more rarely.

Prof. Neumann read a paper on the subject of "Extirpation of the Sclerosis, together with the Lymphatic Glands, in the case of Syphilis," before a recent meeting of the Imperial Royal Society of Physicians, of Vienna. Among the numerous attempts at a preventive-cure of syphilis, it was chiefly the extirpation of the initial sclerosis which had been tried with a view of preventing

the development of constitutional syphilis. These experiments were, as was known, raised to the level of a regular method by the late Prof. Auspitz, of Vienna. The lecturer, owing to his clinical experiences, belonged to the adversaries of this method. They who remove each venereal ulcer, each gumma on the penis, and each chancroid, will, of course, also obtain favorable results, as the last mentioned affections remained free from consecutive appearances even without any extirpation of the local focus of the disease. This method had already lost many of its adherents, and was only availed of in cases in which phimosis to a high degree was produced by sclerosis. The method of an early removal of the sclerosis, together with the adjoining lymphatic glands, seemed to have a better chance of success. Vogt, in 1871, urged the removal of these "deposits" of the syphilitic virus for thus shortening the course of the disease and preventing an invasion of the virus from the local foci.

Bum, in 1882, had carried out the respective experiments; he inoculated on a healthy individual the milky serum of an indolent lymphatic gland which was due to sclerosis, and thus, after the course of four weeks, produced sclerosis and the consecutive appearances. Bum, for this reason, explained the bad success in the case of extirpation of the sclerosis by the supposition that the virulent foci were allowed to remain behind in the lymphatic glands, and, therefore, recommended the excision of the indolent lymphatic glands for obtaining better results. The early excision of the sclerosis and the lymphatic glands was also said to be of a prophylactic influence with reference to relapse and the occurrence of severe forms of the syphilis. Professor Neumann then showed a man who was affected with syphilis, and reported on the course of his disease. The patient was under his care for about five years. On the thirty-second day after the infection, the sclerosis and the adjoining lymphatic glands of the left inguinal region were removed. The wound healed by primary intention. On the fifty-third day after the infection roseola and papule nevertheless supervened on the abdominal wall. The patient took iodide of potassium, and twenty inunctions with mercury were performed on him. He remained in the clinic from June 13 until August 20, hence for 60 days in the whole.

On April 16 the patient again came into the clinic of the lecturer with the following appearance: Two scars, due to the above-mentioned operations, on the back of the penis and in the left inguinal region. The left testicle was the size of an apple, and the limits between the testicles and the epididymides had disappeared, so that these together formed but one tumor. Over the posterior wall of the pharynx there was a large oval ulcer, with undermined borders, and the basis of which had undergone a caseous process. A sim-

ilar infiltration was present on the border between the uvula and the soft palate. The tonsils were also affected.

This case, Prof. Neumann remarked, sufficiently proved that even the early extirpation of the sclerosis, together with the lymphatic glands, was not able to prevent the development of the syphilis, nor could the intensity of the affection become impaired by such a course of treatment. The symptoms met with in the case now referred to, such as gummatous orchitis, syphilitic gummata on the pharynx and the soft palate, were to be considered as being severe forms of the syphilis.

I. L.

MISCELLANEOUS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—*Preliminary Announcement of the Annual Meeting, to be held in Washington, D. C., September 18, 19 and 20, 1888*

Subjects: The President's Annual Address, William H. Taylor, Cincinnati.

Discussion. Extrauterine Pregnancy. 1. Pathology. 2. Diagnosis. 3. Treatment. a. Medical. b. Electrolytic. c. Surgical.

The Relations of the Abdominal Surgeon to the Obstetrician and Gynecologist, Albert Vander Veer, Albany.

Operation for an Unusual Case of Subserous Uterine Fibroid, Hampton Eugene Hill, Saco, Me.

Drainage in Abdominal and Pelvic Surgery, Joseph Price, Philadelphia.

Double Ovariectomy during Pregnancy; a Successful Case Going on to Full Term, William Warren Potter, Buffalo.

The Indications for Artificial Aid in Labor, Thomas Opie, Baltimore.

The Technique of Vaginal Hysterectomy, James H. Etheridge, Chicago.

The Surgical Treatment of the Perineum, William H. Wathen, Louisville.

Laparotomy in Peritonitis, E. E. Montgomery, Philadelphia.

Tumors of the Abdominal Wall, Charles A. L. Reed, Cincinnati.

Uterine Fibroids; their Diagnosis and Treatment, Thomas J. Maxwell, Keokuk.

Desmoid (Fibroid) Tumors of the Abdominal Wall, Edward J. Hill, Newark.

Ruptured Perineum, J. Henry Carstens, Detroit.

A Contribution to the Study of Pelvic Abscess, Clinton Cushing, San Francisco.

The Female Perineum; its Anatomy, Physiological Function, and Methods of Restoration after Injury. This paper will be illustrated with lime-light and screen. Henry O. Marcy, Boston.

Heart Failure in the Puerperium, Thomas Lothrop, Buffalo.

Treatment of Suppurative Peritonitis, William H. Myers, Fort Wayne.

Operative Treatment in Uterine Carcinoma, George F. Shepard, Hartford.

The Reflexes Reflected; or Some Things the Progress in Gynecic Surgery, Joseph Eastman, Indianapolis.

Some Points in Relation to the Diagnosis of Pregnancy in the Early Months, James P. Boyd, Albany.

Vaginal Tamponnement in the Treatment of Prolapsed Ovaries, W. P. Manton, Detroit.

Mr. Lawson Tait, F.R.C.S.E., Birmingham.

1888.]

also present a paper on "The Methods of Success in Abdominal Surgery."

NOTE.—Mr. Lawson Tait, Dr. Franklin Townsend, Dr. E. E. Montgomery, Dr. Charles A. L. Reed, Dr. A. Vander Veer, and others will participate in the discussion on Extrauterine Pregnancy. The full announcement of the topics that each referee will speak to will be made in the final programme to be issued in August.

WILLIAM H. TAYLOR, M.D., President.
WILLIAM W. POTTER, M.D., Secretary.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.—*Preliminary Announcement of the Annual Meeting to be held at Birmingham, Alabama, September 11, 12, 13, 1888.*

Subjects: The President's Annual Address, W. D. Haggard, Nashville, Tenn.

The Annual Oration, W. F. Hyer, Holly Springs, Miss. Floating Kidney, with Vicarious Menstruation, DeSaussure Ford, Augusta, Ga.

Gastrotomy, W. B. Rogers, Memphis, Tenn.

The Medical Treatment of Fibroid Tumors of the Uterus, Bedford Brown, Alexandria, Va.

Indications for Operative Interference in Cerebral Troubles, T. O. Summers, Jacksonville, Fla.

A Case of Tubal Pregnancy, Presenting Interesting Medico-Legal Relations, E. P. Sale, Aberdeen, Miss.

Superinvolution of the Uterus following Trachelorraphy, Virgil O. Hardon, Atlanta, Ga.

1. Dermoid Cysts of the Coccygeal Region, and 2. Electrololysis in Gynecology and Surgery, E. J. Beall, Fort Worth, Texas.

Alexander's Operation, W. L. Nichol, Nashville, Tenn. Hysterectomy in Cancer of the Uterus, W. H. Wathen, Louisville, Ky.

The Extravagancies and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is Concerned, J. M. Taylor, Corinth, Miss.

Treatment of Fractures with Plaster of Paris Splints, W. F. Westmoreland, Jr., Atlanta, Ga.

The Present Status of Electro-Therapeutics in Gynecology, J. R. Buist, Nashville, Tenn.

Antiseptics in Surgery and Gynecology, F. T. Merriweather, Asheville, N. C.

The Attitude of Removal of the Uterine Appendages for the Cure of the Convulsive Neuroses, W. Locke Chew, Birmingham, Ala.

Interesting Cases of Surgery, R. M. Cunningham, Pratt Mines, Ala.

My Antiseptic Bags, or Practical Aseptic Surgery, J. W. Long, Randleman, N. C.

The New Departure in Uterine Therapeutics—The Dry Method, T. A. Means, Montgomery, Ala.

A Study of the various Methods of Treatment of Laceration of the Perineum and Rectocele, with Report of Cases, J. H. Blanks, Meridian, Miss.

Report of a Case of Spinal Concussion, Jno. R. Page, Birmingham, Ala.

Fractures of the Forearm, Jno. Brownrigg, Columbus, Miss.

Some Practical Thoughts in Surgery, James Guild, Tuscaloosa, Ala.

Perineal Lacerations, M. C. Baldridge, Huntsville, Ala.

Electrololysis in the Treatment of Urethral Strictures, S. M. Hogan, Union Springs, Ala.

The Field and Limitation of Laparotomy, I. S. Stone, Lincoln, Va.

Operative Procedure in Hypertrophy of the Prostate, R. D. Webb, Birmingham, Ala.

Discussion. Abdominal Surgery.

Drs. Jno. Herbert Claiborne, Duncan Eve, Paul F. Eve, W. T. Briggs and others will present papers, but as yet have not stated their subjects.

NOTE.—The Association will convene in the hall of the Y. M. C. A., at 10 o'clock A.M. each day. The Annual Oration will be delivered at O'Brien's Opera House on

the evening of the first day's session, at which time the Mendelssohn Club of Birmingham will give a concert for the entertainment of the Association. Entertainments have been arranged by the local committee to take up all the hours not occupied by the sessions. Hotels and railroads will give reduced rates, but only those holding certificates, signed by the ticket agent at point where through ticket to place of meeting was purchased, will be entitled to the two-thirds reduction in return fare.

W. D. HAGGARD, M.D., President.
WM. E. B. DAVIS, M.D., Secretary.

A TRIBUTE TO DR. GARNETT.—The following very appropriate remarks were made at the Medical Society of the District of Columbia on the death of Dr. A. Y. P. Garnett, by DR. JOHN B. HAMILTON:

A giant among medical workers has fallen; a dauntless soul has left our midst. A gentleman, without fear and without reproach; a physician with a spotless record; a practitioner most able; a consultant clever, courteous and conscientious; a scholar of high repute; a medical officer skilled in the exigencies of military and naval warfare; a man of the utmost energy; a devoted friend. All these attributes were possessed by our late colleague, the fact of whose future absence from our meetings falls on more than one here to-night as a personal loss.

Many of us had been accustomed to look for sympathy, support, and counsel to our departed colleague, whose wide knowledge of the world, great learning and vast experience made it a pleasure to be associated with him.

Dr. Garnett, leaving us at the age of 68, has left us the record of a life singularly complete in all that makes up a gentleman and high-class professional man.

Having graduated with honor, he entered the United States Navy, and in due course was promoted to the rank of Passed Assistant Surgeon. It was at this time that he made the voyage round Cape Horn and visited the Chilean coast. He wrote an interesting account of some cases observed in the service, which was published in the *Amer. Jour. of Med. Sciences*. He was ordered to Washington, and after marriage resigned and settled in the Capital.

He was engaged in active practice when the War of the Rebellion came. Who shall censure him now, that he followed the fortunes of his State, rather than those of the old flag? Dr. Garnett always acted true to his convictions of right, as the needle to the pole. Others might scold, sulk and backbite if they wished and remain under the protection of the flag while in enmity to its defenders, but not he. Business, property, peace and comfort were exchanged for the hardships of the camp, the battlefield and the retreat, because his convictions of the righteousness of the Southern cause forced him into the front.

Brave, honest, and true Dr. Garnett! No Northern soldier but honors his hatred of hypocrisy and his courage.

The war ended, his antagonisms died, and his practice was resumed with success, and the reward which none envied, and all approved.

He has lived as a gentleman and physician should live, and he has gone full of years, and covered with honors; but while our tears mingle with those of his immediate family, let us reflect with some satisfaction that we loved him while he lived, and honored him while he was yet in the flesh, and that he was spared the bitterness, so often accorded our great men, of meeting only envy, hatred and detraction during life. And so, while our colleague has passed beyond our ken to the realms of the unknown shore, the comforting thought comes to us that, while with us, he knew of our devotion and repaid us with his esteem.

THE CHAIR OF OPHTHALMOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, N. Y.—Dr. Herman Knapp has been appointed Professor of Diseases of the Eye in the College of Physicians and Surgeons, of New York. Dr. Knapp takes the chair occupied by the late Dr. C. R. Agnew.

Heretofore this chair, together with all the other chairs of clinical medicine, has been strictly clinical in character. Such is no longer the case with reference to the chair of ophthalmology. It has been made a didactic professorship, bears now the same dignity and entails the same emoluments as the chairs of theoretical instruction. This college is to be commended for this just step towards the recognition of specialism. This action will mark a distinctive era for specialism. It is to be hoped, and it is not improbable, that other medical institutions will follow in the steps of the College of Physicians and Surgeons.

The lamentable ignorance of eye diseases with which most graduates go into practice is a reflection upon their Alma Mater. Seeing that there is no compulsory attendance nor any examination necessary in the clinical courses of our medical colleges, the majority of students at least omit to avail themselves of the advantages which are open to them in these departments. However great a lover of knowledge a man may be, he will learn more under compulsion than when left to exercise his own free will; and however ardent a teacher a man may be, he will be more zealous in his pursuit if he feels that substantial and immediate reward awaits him for his work. In an editorial in the past we advocated this recognition of clinical instruction. We do not recognize any causal relationship between our plea and the above-mentioned occurrence, but it is grateful to see that we felt the pulses of some members of the profession with accuracy.

It is foreign to our purpose to discuss the question of specialism. Time has shown that it is inevitable; and since it is inevitable, it were best to place it as soon as possible upon a recognized and dignified footing.—*Gailard's Medical Journal*, August, 1888.

BILLROTH ON MACKENZIE.—PROFESSOR BILLROTH, in a letter to a German daily paper recently said:

"With reference to your request for my opinion on Mackenzie, I can only reply that I have always warned people against passing a judgment on a man who, as a physician, occupies so difficult a position. I have never doubted the correctness of my Berlin colleagues, but I have also never been able to understand what political reasons made it necessary to communicate this diagnosis to the whole world. It cannot be admitted that Mackenzie with his vast experience has ever doubted the correctness of this diagnosis. If he behaved in such a way as to imply that he had some doubt as to the diagnosis, this could only be owing to pressure from above or from motives of humanity. I know such situations from my own experience; one is not inclined to disapprove the statement of one's *confrères*, but at the same time one is not inclined to tell the patient that his malady is incurable, for the known want of infallibility in medical diagnosis is almost the sole ray of hope to the unfortunate incurables. Falseness in such cases becomes a moral act. The entire behavior of Mackenzie must, no doubt, be judged from this point of view. He did as a man and physician what was still possible to be done when the unfortunate word 'cancer' had already been pronounced. In much the same terms as these I have on different occasions expressed myself as to Mackenzie's conduct. I ask you to consider this as a private communication, at least until the sad catastrophe has occurred in Berlin."

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet at St. Louis September 11, 12 and 13. The first day will be given to the discussion of abdominal surgery, the second to infant feeding and some obstetric subject. The third day will be taken up with volunteer papers and some neurological subject. The Society cordially invites all members of the profession to be present at the coming meeting. Arrangements are being made for special rates.

J. LUCIUS GRAY, Secretary.

70 Monroe St., Chicago.

DR. KARL KILCHER, Assistant in the Laboratory of Pathological Anatomy at Prague, died recently of blood poisoning, contracted while investigating the blood of typhus fever patients.

DR. B. E. HADRA, late of Austin, Texas, has accepted the chair of surgery in the Texas Medical College, and has removed to Galveston.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 4, 1888, to August 10, 1888

Major Wm. D. Wolverton, Surgeon U. S. A., is relieved from duty at Washington Bks., D. C., and ordered to duty at Ft. D. A. Russell, Wyo. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Wm. H. Gardner, Surgeon U. S. Army, is relieved from duty at Ft. McHenry, Md., and ordered to duty at Washington Bks., D. C. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Daniel G. Caldwell, Surgeon U. S. Army, is relieved from duty at Ft. D. A. Russell, Wyo., and ordered to duty at Jefferson Bks., Mo. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Ezra A. Koerber, Surgeon U. S. Army, relieved from duty at Ft. Keogh, Mont., and ordered to duty at Ft. Walla Walla, Washington Ter. Par. 5, S. O. 173, A. G. O., July 30, 1888.

Major Calvin DeWitt, Surgeon U. S. Army, relieved from duty at Ft. Sully, Dak., and ordered to duty at Ft. Missoula, Mont. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Capt. Philip F. Harvey, Asst. Surgeon U. S. Army, relieved from duty as assistant to the attending surgeon at Washington, D. C., and ordered to duty at Ft. Keogh, Mont. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Capt. Charles B. Byrne, Asst. Surgeon U. S. Army, is relieved from duty at Washington Bks., D. C., and ordered to duty at Ft. McHenry, Md. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Capt. Wm. C. Gorgas, Asst. Surgeon U. S. Army, granted leave of absence for one month, to take effect on being relieved from duty at Ft. Randall, Dak. Par. 4, S. O. 177, A. G. O., August 1, 1888.

First Lieut. Charles B. Ewing, Asst. Surgeon U. S. A., relieved from duty at Ft. Lewis, Col., and ordered to duty at Washington Bks., D. C. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 4, 1888.

Medical Inspector A. Hudson, detached from the "Trenton" and ordered home.

Surgeon C. H. White, ordered to the "Trenton" at Panama.

Asst. Surgeon John F. Uric, ordered to the receiving ship "Franklin."

Medical Inspector N. L. Bates, detached from the "Pensacola" and to the "Pensacola."

P. A. Surgeon Frank Anderson, detached from the "Pensacola" and to the "Pensacola."

Asst. Surgeon Isaac W. Kite, detached from the "Pensacola" and to the "Pensacola."

Surgeon W. H. Jones, detached from the "Pensacola" and to the "Richmond."

Asst. Surgeon E. P. Stone, detached from the "Pensacola" and to the "Richmond."

Asst. Surgeon A. M. D. McCormick, ordered to duty in the Bureau Med. and Surg.

Asst. Surgeon F. W. F. Wieber report arrived and being detached from "Vandalia."

AUTHOR'S NAME WANTED.—We have on file in our library "The Antipyretic and the Abortive Treatment of Phoid and Remittent Fevers," written on the 10th of the month. There is no name nor date nor address part of the manuscript. The author will oblige by sending his name and address.

THE
Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 18, 1888.

No. 7.

ORIGINAL ARTICLES.

FRACTURE AND DIASTASIS OF THE
SUPERIOR MAXILLÆ AND UPPER
BONES OF THE FACE,

TREATED BY THE AID OF THE INTER-DENTAL SPLINT.
WITH TWO CASES.

*Read in the Section on Dental and Oral Surgery, at the Thirty-ninth
Annual Meeting of the American Medical Association, May, 1888.*

BY JOHN S. MARSHALL, M.D.,

PROFESSOR OF ORAL SURGERY, UNIVERSITY DENTAL COLLEGE,
CHICAGO; ATTENDING ORAL SURGEON ST. LUKE'S FREE HOS-
PITAL AND MERCY HOSPITAL.

Fractures of the superior maxillary bones are, from their protected location, quite rarely met with except in the alveolar process. The causes of such injuries are usually the result of the extraction of the teeth, or blows or falls upon the chin which separate or split open the walls of the alveoli. This is accomplished in the one case by the lateral force applied in breaking up the attachments of the roots of the teeth, and in the other by driving the teeth upwards and through their alveoli.

Such injuries, however, are never very serious, and rarely require special apparatus to maintain the fractured bones in their normal positions. I shall therefore lay aside all consideration of this class of accidents, and confine my remarks to the more serious injuries of this location, viz.: *Fractures and Diastasis of the Superior Maxilla and Upper Bones of the Face.*

This class of injuries (which I present for your consideration) have elicited very little attention either by the general surgeon or the oral specialist, and several of the most noted works on surgery make no mention of them whatever. This, I think, is due to the fact that such cases are of very rare occurrence.

Two cases have recently come under my care at St. Luke's Free Hospital, and have led me to make a somewhat careful examination of the textbooks and periodical literature bearing upon this subject, and so far, I have been able to gather together but nineteen cases which can be fairly classed as similar to those which form the inspiration of this essay.

Injuries to the bones of the face which cause

comminuted fractures and separation from the bones of the cranium, are always the result of great violence; like the passage of the wheel of a carriage over the face, falling from a great height, the kick of a horse, a blow in the face by some heavy missile thrown with great force, or a gunshot wound; crushing of the head between a moving elevator and the floor, the overturning of a carriage upon the occupant, or other heavy crushing force.

Such injuries are always serious and often prove fatal, either from shock, hæmorrhage, direct injury to the brain, or later complications.

In such cases as survive the shock of injury and escape immediately serious complications of the brain, a favorable termination may be looked for, and in many cases with very little deformity. This, however, will depend very much upon the character and location of the particular injury, the success obtained in readjusting the fractured and dislocated bones, and maintaining them in their proper positions.

For the purpose of reference I have grouped together the various published cases which I have found in my search, but shall only mention, very briefly, the extent of the injury and the percentage of fatality.

In speaking of this class of injury, Erichsen¹ says, "In some cases all the bones of the face appear to have been smashed and separated from the skull by the infliction of great violence." He mentions four cases of this form of injury: one reported by South, one by Vidal, and two which came under his own notice.

The injury in South's case was caused by the man being "struck in the face by the handle of a rapidly revolving crank," all the bones of the face were "separated and loosened" and so comminuted as to "feel like beans in a bag."

Vidal's case, also a man, was injured by "a fall from a great height and separated all the facial bones."

Erichsen's cases were both the result of falls from a considerable elevation and striking upon the face. The two former recovered, the two latter died in a few hours.

Packard² mentions three cases: one by Cotting,

¹ Erichsen's Science and Art of Surgery, 8th ed., 1883, vol. 1, p. 545. ² Ashurst's Int'l Encyclopedia of Surgery, vol. iv, p. 67.

in which the face was crushed by a cart wheel passing over it; another, brought to the Pennsylvania Hospital, in which the injury was received by the head being caught between the platform of a steam hoisting machine and the floor; and the last one, a case reported by Heath in his "Injuries and Diseases of the Jaws," which was under the care of Dr. Fyffe. The first and last cases recovered, but in the other death ensued in a few hours.

Heath³ describes two cases: The first came under his personal notice, and was "caused by the passage of a wagon wheel over the face, the bones were completely crushed and separated one from another, and death was instantaneous." The second one is that reported by Dr. Fyffe, and is the same case referred to by Packard, and will be described later.

Tiffany⁴ mentions a single case which was reported by Professor Christopher Johnston. The patient, a gentleman, was struck in the face by the walking beam of a steamboat. All the bones of the face were crushed and "seemed literally to consist of a bag of bones moving freely with inspiration and expiration, so extensive was the comminution." This case made a good recovery and an excellent result was obtained by supporting the superior maxillæ, by means of a silver wire passed through the cheeks and under the teeth, and uniting the ends of the wire over the top of the head by a rubber band.

Richard Wiseman⁵ published the report of the first case on record, and described the method of treatment. The patient was a little boy 8 years of age, who was, kicked by a horse and the whole upper jaw driven in, so that the finger could not be passed behind the palate. A flattened hook was constructed which could be inserted behind the palate and by extension constantly maintained by the hand of the patient and assistants, the bones were held in place and a good recovery followed.

Dr. Fyffe,⁶ of Westminster Hospital, London, has published the report of one case. This patient was thrown from a cab, the vehicle turning over upon him. The superior and inferior maxillæ were fractured, and the bones of the face detached from the skull so that the former "moved up and down in the act of swallowing." This patient also recovered.

Holmes⁷ describes a single case, in which the bones of the face were crushed and dislocated by a carriage wheel passing over the face, and in which, after recovery, there "was a disagreeable lengthening of the face" as a result of the injury; but more likely the result of the treatment.

Among the methods of treatment suggested are gutta-percha moulds, cork disks placed between the teeth, wiring of fragments and carefully adjusted pressure by the Hanesby truss.

Hamilton⁸ refers to one case which came under his own care, in which the upper bones of the face were fractured and torn from their attachments to the cranium, and had to be supported to keep them in place. The patient died on the twelfth day after the injury.

Mason⁹ reports a case which was under the care of Mr. Bickersteth, of Liverpool. A gentleman standing upon the deck of a steamer was struck upon the side of the face by an iron hook attached to the hawser, which had parted under a heavy strain. On examination "immediately after the accident, the mouth seemed to be filled by a piece of bloody meat, but on further examination, this proved to be the muscles attached to the upper jaw; the orbital plate of the superior maxilla of the injured side was found beneath the cheek, whilst the palate process with the alveolar ridge and teeth were, for the time, situated in the upper part of the pharynx, looking towards the bodies of the upper cervical vertebræ. The facial surface of the bone took the place of the roof of the mouth, jamming the jaws open. The soft palate was not torn, but considerably stretched. The superior maxilla of the injured side was turned completely upon its axis.

"The detached mass was replaced, the lower jaw firmly closed upon it for support, and the whole rapidly united with scarcely any deformity."

Mr. John Salter¹⁰ reported a case in which the superior maxillæ and malar bones were separated from their attachments with the skull, and so crushed as to feel like a mass of "loose bones."

Dr. Harris,¹¹ of New York, also reported a case of a little child only 2 years of age, who fell a distance of fifty feet to the pavement, striking upon the face and sustaining fractures and separation upon the median line of both superior maxillæ and palate bones. "Union had not taken place six weeks after the injury."

Mr. Houghton¹² describes a case in which the "superior maxillæ were so fractured and displaced as to make it impossible for the patient to protrude the tongue until after the bones had been adjusted to their normal position."

Bryant¹³ mentions one case in which "the superior maxillary bones were completely detached from the skull, and could be moved about in any direction, yet a good recovery ensued."

Agnew¹⁴ mentions the cases of Wiseman, Fyffe and Packard, but describes no new cases.

Garretson¹⁵ reports two cases. The history of

³ Heath's Injuries and Diseases of the Jaws, 3d ed., p. 5.

⁴ American System of Dentistry, p. 8.

⁵ Treatise on Surgery, 1744, by Richard Wiseman.

⁶ London Lancet, July, 1870.

⁷ Holmes' Principles and Practice of Surgery, p. 147.

⁸ Hamilton's Fractures and Dislocations, p. 172.

⁹ Mason's Surgery of the Face, p. 75.

¹⁰ Medical Times and Gazette, Jan. 1, 1866, p. 20.

¹¹ Surgery of the Face, p. 1.

¹² New York Med. J. Jan. 1, 1870, p. 21.

¹³ British Med. J. Jan. 1, 1870, p. 21.

¹⁴ Surgery of the Face, p. 75.

¹⁵ Bryant's Fractures and Dislocations, p. 147.

¹⁶ Agnew's System of Surgery, p. 147.

¹⁷ Garretson's Fractures and Dislocations, p. 172.

The left side of the face was completely anæsthetic over the whole region supplied by the infra-orbital nerve, while upon the right side the upper lip and the wing of the nose only had lost sensation. The inferior maxilla was not injured and none of the teeth lost by the injury in either jaw.

The accident occurred by the patient being struck in the face by a piece of oak timber 12 inches long and 9 x 8 inches in diameter, which was thrown by a circular saw 18 inches in diameter, and revolving at the rate of about 3,000 revolutions per minute.

When the patient was admitted the chances for recovery seemed very small. Cold applications were ordered over the face, and stimulants hypodermically, if the temperature should fall below normal and the pulse below 60. Nourishment to be given if possible, and $\frac{1}{4}$ grain of morphia to allay pain.

cesses were then moulded into place as nearly as possible with the fingers, and the nasal bones lifted into position by means of the handle of an instrument. The lower jaw was then closed upon the superior teeth, care being taken to get a correct occlusion, and held in position by means of an occipito-frontal and occipito-mental bandage.

The following night the patient tore off the bandages several times. The nasal passages being closed he had great difficulty in breathing when the jaws were held tightly together. The bandages were therefore reapplied more loosely, but this allowed the injured bones to fall out of place, and defeated the object in view. This is the plan of treatment usually recommended by such authors as mention this class of injuries, but in my hands it has proved a signal failure, from the fact that the nose was so injured and the parts so badly swollen as to close the nasal passages for several



one which would maintain the position of the fractured bone and at the same time leave the lower jaw free, so that the mouth could be open for the purpose of breathing. This was accomplished by adapting the principle of the Kingsley interdental splint to the upper jaw. Impressions of the upper and lower teeth were taken in modeling compound, by first moulding it on the upper teeth and while it was yet soft forcing the lower jaw upward till a correct occlusion of the teeth was obtained. This impression was trimmed to the desired shape and a one-eighth inch steel wire was imbedded in the sides upon a line with the ends of the teeth and then bent backwards upon itself opposite the cuspid teeth, and allowed to extend outside the cheek nearly to the lower border of the ear. From this was constructed a hard rubber splint with the wires attached. The splint was held in position by means of double straps



Case No 1 Cut No 3—Shows the apparatus in position

attached to the wire upon each side and buckled to a close-fitting leather cap laced firmly upon the head. This proved to be a very successful appliance, as it held the bones in their proper position, permitted comfortable breathing and free movement of the lower jaw, which enabled him to talk and after a few days to masticate soft food.

Deep indentations were left in the under side of the splint in which the lower teeth fitted accurately when the mouth was closed. The object of this was to furnish a sure guide to the normal position of the upper maxillæ. Without this the correctness of the adjustment of the bones could not have been verified. The importance of this cannot be overestimated. The only other treatment was good feeding and thorough irriga-

tion of the wounds, antræ and the mouth, with a 2 per cent. solution of carbolic acid every two or three hours until the discharges ceased, and the removal of a few spiculæ of bone from the nose and the wall of the right antrum.

The patient was discharged on May 14th, with small fistulous openings through the gums leading into both antræ at the points of fracture, and a small opening in the hard palate which was gradually growing less. There was also a slight deflection to the left of the nasal septum. The opening into the right antrum soon closed, as did that in the hard palate.

June 22.—Patient returned for the removal of the cicatrix in the right cheek, which was adherent to the maxillary bone.

June 25th.—Stitches removed and the patient discharged.

The opening into the left antrum remained pat-

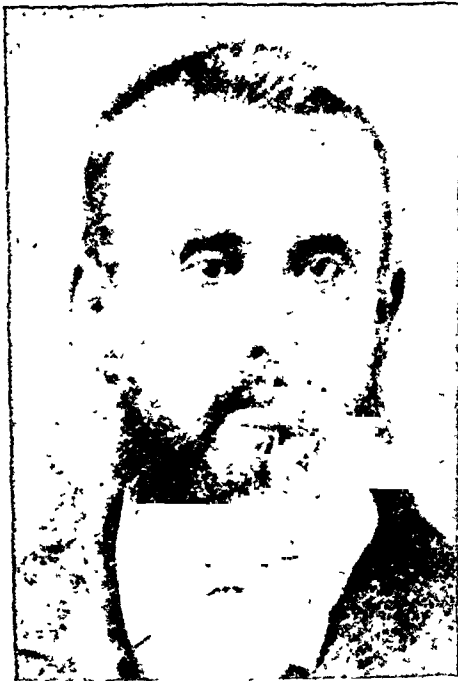


Case No 1 Cut No 4—Shows final result after the operation on the cheek.

ulous for some months, with slight discharge into the mouth, but finally closed. Sensation has been entirely restored in both sides of the face.

Case 2.—Henry S., German, æt. 35, occupation laborer, employed at Armour Packing House. Was admitted Oct. 7, 1887, one hour after the accident, which was caused by being struck across the bridge of the nose by a descending elevator while he was looking up the shaft. Was suffering from concussion of the brain when admitted. Examination disclosed the fact of a lacerated wound over the left eye and extending across the nose to the right eye, the finger could be introduced and readily passed down into each orbit and against the fractured edges of the nasal and

sphenoid bones. By taking hold of the upper teeth all the bones of the upper face were found to be movable, and when the mouth was open the the upper teeth rested upon the lower and there was a peculiar and disagreeable elongation of the face. A later examination revealed the fact that the frontal sinus was crushed in, the nasal and lachrymal bones comminuted, and that all the bones of the face were torn loose from the skull on a line passing through the orbits; and that the superior maxillæ were separated from the other bones of the face. The inferior maxilla was not injured. Several loose pieces of bone were removed from the region of the inner canthus of each eye by the house surgeon. The wound was stitched, drainage tubes inserted, the lower jaw bandaged tightly against the upper teeth, and iced cloths ordered over the face and head. Pulse 60, temperature 97.4°. Stimulants administered



Case No. 2. Cut No. 1.—Six years before the injury.

freely. Profuse hæmorrhage occurred during the night, and vomiting of blood every few hours until two o'clock on the following day. He became conscious during the night, but the other symptoms seemed to give but little hope of a final recovery.

The temperature reached 102.2° on the 8th, at 4 P.M., and fell to normal on the 9th. No brain symptoms developed and the patient rapidly improved in general condition from this time. Swelling and suppuration were so extensive for several days as to render the adjustment of a splint impossible. The treatment consisted of stimulants and thorough irrigation of the wounds. The old method of bandaging was resorted to but proved a failure, for the reason that the lower jaw could

not be held sufficiently closed to support the fractured bones in their proper position without obstructing breathing by the mouth. This was necessary as nasal breathing was at the time impossible.

Oct. 24th.—Inserted an interdental splint, constructed after the plan of the one used in the preceding case, and supported it from the head by the same means. The case progressed favorably and was discharged on Dec. 3d, the bones having all united.

Dec. 24th.—Patient returned complaining of double vision. The lens of the left eye looked cloudy and traumatic cataract was feared.

April 1, 1888.—Patient seems entirely well. The double vision complained of has passed away and the lens has cleared up.

From the casts of the jaws in Case 1, it will be seen that the occlusion of the teeth is nearly, if



Case No. 2. Cut No. 2.—Final result

not quite, normal. And by the photographs taken before the accident occurred (which I have been so fortunate as to obtain in both cases) and those taken since the patients were discharged, that in Case 1 the only deformity visible is a slight flattening of the right superior maxilla and the faint line of the cicatrix resulting from the incised wound in the cheek.

In Case 2 the occlusion of the jaw is equally good but the deformity is greater. This is the result of the loss of portions of the nasal bone and the external wall of the frontal sinus, and the adhesion and contraction of the cicatrix over these places.

No. 9 Jackson Street.

DR. E. S. TALL OT, of Chicago: We

listened to Dr. Marshall's paper with unusual interest, as it treats of cases which demand prompt and positive treatment. Great force is required to produce an injury of this nature. Other complications, such as shocks, inflammation and secondary hæmorrhage are liable to ensue on account of the locality. If nature or treatment can overcome these difficulties another serious one presents itself in devising a means to hold the parts in place after putting them in proper position, until they have united.

A few years ago I was requested to assist Dr. Powell, of Chicago, in a case somewhat similar to one mentioned by Dr. Marshall. A girl, about 8 years of age, was leaning over an opening in an elevator shaft, head down, when she was struck on the back of the head by the elevator, the face forced to the sill of the building. She sustained a compound fracture of both superior and inferior maxillary bones. The parts were put in their natural position, the teeth being the guide. The jaws were bandaged together in the usual manner. The next morning we found the bandage off, with the bones slightly displaced. This is the point I wish to make: that where a bandage is used it is not certain it will remain in position twenty-four hours. After a little study we concluded upon the following plan, which I believe to be an infallible method of treatment: A skull-cap was made of cotton cloth to fit the head as far as the eyebrows and occipital protuberance. A splint for the inferior maxilla was made of gutta-percha (card-board, tin, or anything that can be moulded to the jaws will do as well). Having placed the pieces of bone in position and brought the jaws together so that the teeth occluded properly, adhesive strips were cut one inch in width, wound and fastened not only to the splint and the skull-cap, but also to the cheeks. The strips were applied in such a manner as to exert the proper force in the right direction. Three or four were then applied. One or two strips fastened to the splint, the cheeks and back of the neck, held all firmly in position.

The patient can be fed with liquids through a rubber tube. Should the teeth be missing, or but a few in position, occlusion would be impossible and the dental splint must be used. The adhesive strips can then be used in the manner described.

SEPTIC DYSENTERY.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY BEDFORD BROWN, M.D.,
OF ALEXANDRIA, VA.

I wish to submit for your consideration some remarks on the history and treatment of septic dysentery as the disease has at different periods come under my observation. Acute dysentery presents itself in two distinct types. One is the

simple benign catarrhal form. The other is the grave malignant type arising from septic causes, which has often desolated countries, cities, towns and armies. It may prevail either sporadically or epidemically, and it may be confined to a circumscribed locality to a neighborhood, and even to a single family or household.

Etiology.—Excessive and continuous heat is doubtless the chief predisposing cause of catarrhal dysentery. On the other hand, I think that the facts go to prove that there are other causes concerned in the development of the malignant septic variety which are more preventible and removable in their nature than the effects of solar heat on the human constitution.

I am impressed with the conviction, based upon long experience, that wherever and whenever malignant dysentery prevails, whether in a family, neighborhood, city, or army, there exists in that particular locality a septic cause in the form of unsanitary condition, either in the water consumed, or the air breathed by the inhabitants infected. I believe that when these causes exist in a locality where simple catarrhal dysentery prevails they will be ample to convert the simple into the septic form. Septic dysentery is a contemporary of typhoid and typhus fevers, hospital gangrene and erysipelas.

In armies surrounded by unsanitary influences, in hospitals, jails and prisons with impure air, uncleanly cities and towns, and indeed, wherever there is a bad hygienic state when dysentery prevails, its type will be modified by the existing hygienic influences, either for good or bad. Cleanliness is the fundamental principle of all sanitary science. Purity of air and water and cleanliness in all things—in person, in our homes, our villages, towns and cities, in our farms and barnyards—constitute the best preventive of septic disease. During the prevalence of excessive droughts when the supplies of drinking water are greatly diminished and become impure from the accumulations of putrescent animal and vegetable matter, septic dysentery is exceedingly liable to prevail. This fact was very clearly illustrated in a certain section of Virginia during a devastating drought two years since. It is said that the water of this entire section became impregnated with putrid organic matter. The unsanitary condition of these waters developed a widespread epidemic of septic dysentery of a peculiarly malignant and destructive character, which in point of fatality and rapidity of progress was unsurpassed in the annals of the disease.

During the very hot dry season of 1887 dysentery prevailed epidemically almost universally. In those sections where the sanitary condition was good the disease pursued its mild, simple course. But, on the contrary, in unsanitary locations the malignant type appeared. Some facts of interest bearing on the causes and prevalence of

septic dysentery during the recent war may, I think, be cited here with benefit to the cause of sanitary science.

In the months of September and October, 1861, a Confederate force of probably 15,000 was encamped on Great Sewell Mountain, in West Virginia, a region famed for the salubrity of its air and purity of its waters. The health of these troops at first was exceptionally good. But when, from want of simple sanitary arrangements, the surrounding country became covered with excrementitious matter, human and animal, and this had been conveyed into the sources of drinking water by excessive rains, a septic form of dysentery, diarrhoea and malignant typhoid fever appeared and desolated the army.

In the autumn of 1862 a Confederate brigade was encamped at Drewry's Bluff, on the James river. An epidemic of malignant septic dysentery appeared during this time, and prevailed among these troops with great severity, and until sanitary measures were taken to arrest it, treatment had but little result.

It was found that the entire surrounding section, having been occupied previously by troops, had become the receptacle of a vast quantity of excrementitious matter which, dissolved by occasional rains, had found its way into the fountains and streams of drinking water and infected the entire command. The surroundings of the encampment were thoroughly cleaned, the sources of water supply were purified, and lastly, sanitary pits were excavated for cesspools at a remote point. Subsequently to this we had occasional cases of dysentery, but no case of the malignant type. We found that the slightest inattention to the laws of health ensured the prevalence of septic dysentery. We found, also, when an army was in motion traversing rapidly new and unoccupied regions, though there were privations from deficient supplies of food, clothing and shelter, the health of the mobilized army improved, and it escaped septic diseases. On the contrary, when troops were confined to close quarters, as barracks or house tents, for a protracted period, septic influences accumulated in these quarters from the exhalations of effete materials from the human body, and the vast deposits of excrementitious matters in the immediate surroundings, which poisoned air and water. Under such circumstances septic diarrhoea and dysentery were liable to appear even in cold seasons, if not guarded against by rigid sanitary measures. A thorough and methodical system, instituted for the purpose of isolating, localizing and disinfecting excrementitious matters, human and animal, to prevent them from contaminating both air and water, afforded more perfect

directly to the presence in the water we consume of the poisonous elements of excrementitious matter, both human and animal. In illustration of this statement I will cite an instance which came under my own personal observation more than thirty years since.

A family residing in a most salubrious location, on a mountain top, with delightfully pure air, was attacked with exceedingly malignant dysentery, apparently without visible cause. The prevalence of such a disease in such a locality created surprise, until it was discovered that a privy and a pig-sty had been located in a situation from which drainage into the fountain of drinking water was affected by every rainfall. The different members of this family had been consuming this contaminated water during the season, until their systems were infected by the poisonous matter.

Pathology.—Whether the septic infection in this form of dysentery is conveyed into the system by means of a specific bacterial germ, or by means of the formation of a toxic ptomaine in the dysenteric debris in the intestinal canal and absorbed into the circulation as such, are unsettled questions. But the widespread havoc committed on the entire system in the form of diphtheritic exudations and gangrenous necrosis of the mucosa of the large intestines, hepatic abscesses, adenitis, suppuration and softening of the mesenteric glands, disorganization of the vital properties of the blood, as the corpuscles, fibrine and albumin, softening of the parenchymatous structures, softening of the muscular tissue of the heart, abscesses in different organs, thrombosis, affections of serous membranes, embolic pneumonia and suppurative pleuritis in these cases of malignant septic dysentery, all indicate clearly a septicaemia as profound and caused by a poison as virulent as that of typhus or typhoid fever. These indications are so clear as to be unmistakable, and should afford us a guide to our hygienic and therapeutic management of the disease. Septic dysentery, as observed by myself in military and civil practice, has appeared under three forms, each form having some distinctive peculiarities.

In this form of the disease, after the early stages, pain is not a conspicuous symptom and is often moderate. At this stage the evacuations often become involuntary from relaxation of the sphincter. The countenance is pale, haggard, sallow, dull and listless. The patient is exceedingly languid and indisposed to move, to think, or even to respond to questions. He is indifferent to all surrounding circumstances or consequences. If reaction is not established in these cases they often terminate in forty-eight hours. The tendency in all these malignant septic cases is to gangrene and necrosis of the inflamed mucosa. The presence in the inflamed intestine of these diphtheritic exudates and gangrenous sloughs when undergoing the putrefactive process must generate a toxic material that is capable of producing a virulent septicæmia when absorbed into the circulation.

The Hæmorrhagic Form.—I have observed a dangerous form of septic dysentery accompanied with such decided hæmorrhagic symptoms as to entitle it to that term. In these cases in the early stages the evacuations are muco-sanguineous. But very soon these are accompanied with considerable and exhausting hæmorrhages, composed of a dark-colored fluid blood which has no tendency to coagulate. These hæmorrhages, in more or less quantity, occasionally amounting to as much as twelve ounces, recur at intervals during the attack, and are very exhausting. These hæmorrhagic discharges often contain mucous, diphtheritic exudations and sloughs. They doubtless are due to the breaking down of gangrenous tissue and rupture of vessels of some size. This is, in my experience, one of the most fatal varieties of dysentery. The vital prostration in this class of cases is always extreme and much resembles in general features the malignant grade of typhoid fever, excepting the conditions of the mental powers, which usually remain clear until the last. Even when the frequency of the pulse reaches 150, the extremities and surface cold, and the thermometer indicates a subnormal temperature, the mind is often unaffected. I have only seen this form of dysentery occasionally during the prevalence of very malignant epidemics.

The adynamic type of septic dysentery begins with tormina, tenesmus, and frequent muco-sanguineous discharges. The attack is usually ushered in with distinct chill, followed by fever, but not of a high grade. Very early in the attack adynamic symptoms make their appearance. The tongue becomes dry and brown, the abdomen tympanitic and tender on pressure. The pulse is always frequent and feeble. The temperature rarely exceeds 104°. Delirium is an early and marked feature. The evacuations consist of very offensive, thin, bloody mucus. Patients in this peculiar, somnolent delirium often lose control of the bowels. This form of dysentery is usually some-

what protracted. It not unfrequently continues from two to four weeks.

Treatment.—In the treatment of septic dysentery there are several important objects to be considered. To remove systematically from the intestinal tract all infectious fæcal and dysenteric matters; to disinfect that canal; to sustain the depressed nervous and circulatory systems, and replenish the poisoned blood, are leading considerations. The primary object is to clear the intestinal canal thoroughly of all accumulations that might prove a source of infection. A ten grain dose of the mild chloride of mercury combines the properties of a thorough cathartic with decided antiseptic powers. In the malignant or collapsed form the tendency is to sink down into speedy and hopeless collapse. It is necessary to counteract this tendency by prompt measures, and to establish reaction by the use of the most potent cardiac and nervine tonics and stimulants. At the same time active disinfection of the intestinal tract should be practiced. I have found a combination of brandy and port wine in equal parts act well as a restorative. Of therapeutic agents the most effective stimulant in my knowledge is found in the following combination:

| | |
|------------------------------|--------|
| R. Morph. acetatis. | gr. ij |
| Strychnia. | gr. ss |
| Ext. belladonna | gr. ij |
| Bismuth salicylate | 3 ij |
| M. ft. pil xxiv. | |

A pill is to be taken every three hours. In connection with this the one-hundredth of a drop of nitro-glycerine, in granules or solution, should be given every alternate period or interval, until the tendency to collapse is corrected, and reaction is established. In cases attended with great prostration these agents tend to strengthen the action of the heart, contract the relaxed arterial system, increase arterial tension, correct general relaxation, tone up the depressed nervous system, and above all others, to arrest collapse.

In a case of this kind occurring during an extensive epidemic in September last, in which case there was early tendency to collapse, manifested in extreme vital prostration. The patient was lethargic and somnolent. The surface was cold and clammy. The thermometer indicated a temperature under the tongue of 96½°. The pulse was scarcely perceptible and exceedingly frequent. The patient had lost all desire for food or drink. After the failure of all possible diffusible stimulants, the above combination of remedies was resorted to with the effect of restoring reaction. In another case, accompanied with exhausting hæmorrhage and collapse, the same remedies established reaction. When this has been accomplished and this class of remedies can be dispensed with, then sulphuric and hydrochloric acids in combination may be resorted to with advantage, in the following manner:

| | |
|------------------------------------|-----|
| R. Acid hydrochloric, dil. | ℥ij |
| Acid sulphuric, dil. | ℥ij |
| Aquæ | ℥vj |
| Syr. aurantii cort. | ℥ij |
| Tinct. opii deod. | ℥ij |
| mp. | |

A tablespoonful diluted every three hours exerts a decidedly tonic and antiseptic effect in these cases. The chlorine and sulphur held in solution in these acids imparts to them an antiseptic and germicidal power possessed by few other agents. Septic condition of the intestinal canal indicated by tendency to gangrene and sloughing, diphtheritic exudations, putridity of dysenteric débris, manifested in the intensely foetid discharges, and those symptoms of general septicæmia resulting from the local disease, call for local antiseptic treatment.

Antiseptic irrigation becomes as much a necessity in these cases, to prevent or arrest general infection of the system, as in the septic puerperal uterus, and is based upon the same principle of removing all infectious débris, and disinfecting the diseased organ. The absolute importance of the disinfectant treatment of local diseases has only been appreciated as a means of preventing constitutional infection, since the nature and action of sepsis has been understood. The principle applies with equal appropriateness to the study and treatment of the malignant septic forms of dysentery as to other kindred affections.

The first antiseptic irrigation practiced should be composed of warm water and carbolic soap, or, in other words, carbolic soap-suds. This always cleanses the entire tract thoroughly, and not only affords comfort, but produces a change in morbid action. Subsequently antiseptic irrigation should be continued by means of a solution of the peroxide of hydrogen in an 8 per cent. strength. While my experience with this remedy as an antiseptic in this affection is limited, this experience has been so favorable that I am compelled to regard it as one of the most effectual antiseptics and disinfectants known. At the same time it is free of danger. Thrown into the large intestine in malignant dysentery, it arrests putrefaction in the débris of broken down tissue and discharges, corrects fœtor, prevents infection, and exercises an important influence in cleansing and healing the ragged and unhealthy ulcers left in the mucosa of the large intestine after the separation of sloughs.

I find that the best method of conducting antiseptic irrigation in these cases, to reach all diseased parts, is to place the patient in the knee-

adynamic type; when the system has been subjected for a length of time to the prostrating influences of septicæmia, these irrigations, practiced systematically, always modify the local disease and improve the general condition. It is in this form of disease that I have found certain styptic solutions of iron so valuable. The solution of the persulphate of iron \mathfrak{ss} , aqua \mathfrak{v} , simple syrup \mathfrak{ss} ; or the tinct. of the chloride of iron \mathfrak{ss} , aqua \mathfrak{vj} , syr. limonis \mathfrak{ss} , acid phosphoric dil. \mathfrak{iiij} , in doses of a tablespoonful, combined with 10 or 20 drops of the deod. tinct. opium, every three hours, are admirable tonics to the general system, and alteratives of value on the local affection.

In the hæmorrhagic tendency or in those cases with copious, thin, offensive discharges of bloody serum, these preparations are of peculiar value.

The oil of turpentine in teaspoonful doses in emulsion is also appropriate in the treatment of these cases, given three times daily.

The use of Cathartics in Septic Dysentery.—I regard the use of certain cathartics in this form of dysentery as eminently necessary to carry out in full the principles of antiseptic treatment. We must not only apply chemical agents to arrest the process of sepsis, but also use means to remove the prime causes of infection. In cleansing a cesspool we must not only disinfect its contents, but remove them, so that there may be complete isolation to prevent infection. Almost invariably following the action of a cathartic, mercurial or oleaginous, there is improvement in the general and local symptoms. The symptoms of septicæmia and constitutional suffering improve, while the tormina, tenesmus, nausea and vomiting, abdominal distension, and frequency of intestinal action, diminish for the time, and often permanently. Now what is the rational explanation of this therapeutic result? It is simply that all septic faecal and animal matter that might infect the system has been removed. In the beginning of treatment, as an antiseptic cathartic a 10 gr. dose of the mild chloride of mercury is superior to all others. But the castor-oil and turpentine combined with 10 drops of tinct. of belladonna given occasionally, subsequently, is the most thorough in its action in removing all accumulated matter with the least injurious results. In removing this putrid infectious matter we are aiding materially the great cause of antiseptis.

In the adynamic type of cases occurring during the epidemic of the past season, accompanied with

lignant septic cases of dysentery we do not always realize the extent of the depressing influence on the vital functions of the existing septicæmia. Neither do we always appreciate the importance and necessity of the use of nutritious stimulants and restoratives in this class of cases. I am impressed with the conviction that many of these cases go down from want of attention to this question.

Thirty-five years ago, in an epidemic of malignant dysentery that came under my observation, the most of the bad cases which recovered were saved by the liberal use of stimulants, nourishment, an occasional mercurial cathartic, and anodynes. Some of these patients, who were threatened with collapse, consumed as much as twelve ounces of brandy per diem.

We must not depend alone on antiseptics and tonics to relieve septicæmia. New blood must be made, to repair the decay of the old. And the tissues, which are undergoing rapid disintegration, must be renovated, or death will ensue. This can only be accomplished by the use of every means to sustain the system, the constant tendency of which is to sink down into collapse. In this form of dysentery there exists a dangerous blood depreciation, that renders the use of the most concentrated stimulants necessary. Milk punch, milk, eggs and brandy, or egg-nog,¹ beef tea made with lean beef and barley, Scotch broth prepared with lean mutton and barley, constitute valuable aliments in this affection. In diseases with great vital depression and loss of digestive power, we should shape the preparation of food so as to make it as tempting as possible to the palate which relishes nothing, and as digestible as one can prepare it.

Opiates in this, as in other forms of dysentery, cannot be dispensed with for the relief of pain and to procure needed rest. But their reckless employment for the prolonged suppression of the discharges is, in septic dysentery, not unattended with danger. After the action of a cathartic, when the alimentary tract has been cleansed of its septic contents, and secretions restored, then is the proper time for the administration of opiates. On the other hand, opiates should be followed by cathartics for the removal of all fecal and animal matter that for the time may have accumulated. We should never lose sight of the fact that dead animal matter, whether in the uterus, puerperal or non-puerperal, in the bronchial tubes, in the pleural cavity, in tuberculous cavities, in the bladder, in the cranium, or in the intestinal canal, when retained sufficiently long to undergo decomposition, generates infectious matter that will

endanger health and life. Here is the principle that should guide us in the administration of opiates. They are astringents of the first order, and when injudiciously used may lock up in the intestinal canal, which is in truth the great sewer of the system, matters that are constantly undergoing decomposition, and generating septic material of a deadly poisonous character.

Some years since I witnessed an instance in which a rapidly fatal case of septicæmia, accompanied with peritonitis, occurring in a simple case of catarrhal dysentery, resulted from the continuous use of opiates for forty-eight hours, which caused retention of putrescent matter in the intestines. In this case there was speedy generation of septic matter in the intestinal canal from suppression of discharges, supervention of symptoms of septicæmia, and finally peritonitis.

NOTE ON THE TREATMENT OF CATARRHAL INFLAMMATIONS OF THE UPPER AIR-PASSAGES.

BY ELY McCLELLAN, M.D.,

SURGEON UNITED STATES ARMY.

Early in January of the present year, I was asked by a patient to call on Dr. T. F. Rumbold, of St. Louis, Mo., and obtain some information as to a case which had formerly been under his care. At the time of my visit I had no knowledge of Dr. Rumbold's specialty or of the valuable therapeutic methods he has originated. I was suffering at the time with catarrh, which was increased by a "bad cold," while my malaise was intensified by physical prostration attending severe and prolonged over-work.

In the course of our conversation, Dr. Rumbold noticed my condition. An examination followed and a treatment was offered which I was glad to accept, though no flattering assurances were held out. The sense of relief which I obtained from the first application was most grateful and encouraging. I placed myself under Dr. Rumbold's care, and the results obtained in the amelioration of my distressing symptoms filled me with new hope. True I have not been free from the necessity of occasional applications. The accession of fresh colds require treatment, yet comparing my condition to-day with what I was mentally and physically six months ago, I am restored to my original optimism.

Up to the date of my visit to Dr. Rumbold, I had treated myself carefully, assiduously, and with the most approved appliances, but only to encounter constant disappointments which forced upon my mind the fact that so far from improving my condition I was constantly growing worse. From Dr. Rumbold I obtained, not only relief from my distressing symptoms, a reasonable

¹ A further experience in the use of the favorite American drink, egg-nog, as a diet and nutriment in adynamic types of dysentery, is superior to all others. During the present season I have, by this nutriment alone, sustained for many weeks some of the most malignant cases, both in adults and young children. In two cases of this kind life was sustained alone by this diet during most dangerous attacks lasting six and seven weeks.

prospect of a more comfortable existence, but the knowledge of a practicable and thorough method by which, at least relief, can be extended to all cases of nasal catarrh.

Encouraged by the success that attended the treatment in my own case, I resolved to extend my experience in the treatment of both acute and chronic inflammations of the upper air passages. I am on duty at a depot for recruits, where large numbers of men are constantly arriving. These men come from all classes of life, and very many of them are directly influenced by the abrupt climatic changes to which they have been subjected, thus affording an excellent field for extended experiment. The results gained may be briefly stated. In a considerable number of cases of acute inflammation of the upper air passages treated by the Rumbold method, the attack in the majority of cases was aborted; of those remaining the severity was greatly mitigated, while in but one case did the disease resist treatment, and the inflammatory action result in suppuration. In all chronic cases treated the advantages of the method were equally apparent. Each succeeding case demonstrated the exactness and facility with which the cleansing process is accomplished, and the thoroughness of the application to the inflamed surfaces, and the encouraging results thereby obtained.

I do not propose in this paper to proceed to any exhibition of cases, but simply to present a statement of the therapeutic measures that have been instituted, successfully practiced, and presented to the profession by Dr. Rumbold, the efficacy of which is well known and recognized in his place of residence, but which as yet is but little known or talked of in the great medical centres.

In the treatment of the inflammatory conditions that result in rhinitis and its sequelæ, as well as in the defined stages of the disease, it is recognized as the first essential to the successful treatment that the abnormal secretions be removed from the mucous surfaces, and that having been accomplished, the second step, which is of vital importance, is the application of suitable medications to the cleansed surfaces. The difficulties in the way of filling the first indication

tion by the presence of one or more of the salts or of other agents. This application is accomplished by the nasal douche, syringes, or by the various spray instruments, by means of which a greater or less flow of medicated water, governed by a greater or less propelling power is made to flow through the choanæ, by gargles and by the use of probangs and brushes applied through the mouth.

The question of importance is, do these procedures absolutely clean the membranes of the nasal chambers? Does the cleansing fluid reach to the superior and posterior surfaces of the nasal and pharyngo-nasal cavities? Does it remove all the secretion which may be present, or does it simply tunnel out for itself a channel through which it may unobstructedly flow?

My own impression based upon an experience of many years, is that the upper air-passages can never be thoroughly cleansed by a water douche of any kind unless a very large quantity of the fluid be used, and without its being applied with a force which must be hazardous to the integrity of the mucous membrane; and one is forced to the conclusion that because the nasal cavities in the subjects of chronic inflammation have not been absolutely cleansed from the abnormal secretions by the methods most generally advocated, nasal catarrhs are classed as intractable, and have become an opprobrium to the general practitioner. Nor are probangs armed with sponges, absorbent cotton, or swabs of linen or cotton fabrics, or brushes of Camel's-hair more efficacious when applied from behind the soft palate. To detach a mass of tenacious mucus from an inflamed surface by the application of force is a laborious and oftentimes thankless task, and when accomplished it is almost always at the expense of the tissue from which it is detached. The gargle is now considered obsolete and useless when applied for such purposes.

To Dr. Rumbold is certainly due the credit of having devised means and apparatus by which a complete cleansing of the entire surface of the nasal and pharyngo-nasal cavities may be accomplished, with comfort to the patient and to the entire satisfaction of the operator. The

roduced behind the soft palate sprays the pharyngo-nasal cavity. A third, also passed behind the soft palate cleanses the posterior nasal cavity, throwing the spray under the inferior, middle, and superior turbinated processes. A fourth, cleanses the fauces, the tonsils and the lower portions of the pharynx.

It is an assured fact that the warm vaseline will readily detach all mucus however inspissated it may be from the walls of the upper air-passages. A careful examination after each application will always discover the inflamed mucous surfaces free from secretion and covered with a thin coating of the vaseline.

The mucous membranes having been cleansed from abnormal secretions the remedies remain to be selected by means of which the inflammatory action may be arrested, and the tissues may be restored so far as may be possible to their normal condition. The application of medicated inhalations have been practiced since the days of Hippocrates and Galen, and almost endless are the agents which have been from time to time adopted, lauded, but finally abandoned. Delavan writes on this subject: "At present so many different therapeutic methods are proposed and strongly advocated by good authorities, that it is impossible to refer to any as established."

The majority of agents recommended are, strictly speaking, irritants to the mucous membranes. It is well-known that water itself is an irritant, and yet water is the vehicle almost invariably employed. It is significant when we read Eichhorst's statement, when treating of chronic catarrh, that "the treatment is discontinued for a few days if pains and violent inflammation develop." Prosser James continually calls attention to the necessity of not causing irritation by the strength of solutions so employed. Bellamy recommends the employment of "weak solutions" by the nasal douche, and instances might be further quoted showing the growing tendency to the abandonment of heroic treatment in the diseases of the throat and nasal cavities, although the galvano-cautery is still at the head of the procession.

The departure of Dr. Rumbold from the established line of practice for the successful treatment of catarrhal inflammations of the nose, throat and ears is best announced in his own words. In the treatment of all such cases, the following is positively indicated.

1. Non-irritating agents only should be used.
2. The means of making these applications should not produce the least irritation.
3. The whole of the irritating catarrhal secretion should be removed.
4. The agent employed should have sufficient solidity to remain for several hours on the inflamed surface to protect it as much as possible from the irritating influence of the air, and it

should possess also such properties as will prevent the future secretions from becoming acrid.

As essentials to perfect success it is insisted that, every portion of the diseased surfaces within the nasal and pharyngo-nasal cavities must be treated. That force enough must be exerted to remove all morbid secretions from the diseased surfaces, but that an excess of force must be avoided. That the medicament must be applied quite warm.

A long experience has led Dr. Rumbold to the selection of the following remedies as those from which the most constant beneficial results are to be obtained, viz.:

1. Vaseline pure.
2. Vaseline with eucalyptol.
3. Vaseline with gaultheria.
4. Vaseline with carbolic acid.
5. Vaseline with pinus canadensis.

The applications to the nasal and pharyngo-nasal cavities are made with all the remedies, with the exception of the gaultheria and the pinus canadensis. The two remedies last named are applied only to the larynx and to the pharynx.

The applications are made at intervals of from twelve to twenty-four hours, until the severity of the symptoms are relieved, and then every fourth or fifth day.

Constitutional treatment is also necessary, but a consideration of that subject does not come within the scope of this paper.

Jefferson Barracks, Mo., July, 1888.

A NEW CLINICAL SPHYGMOGRAPH.

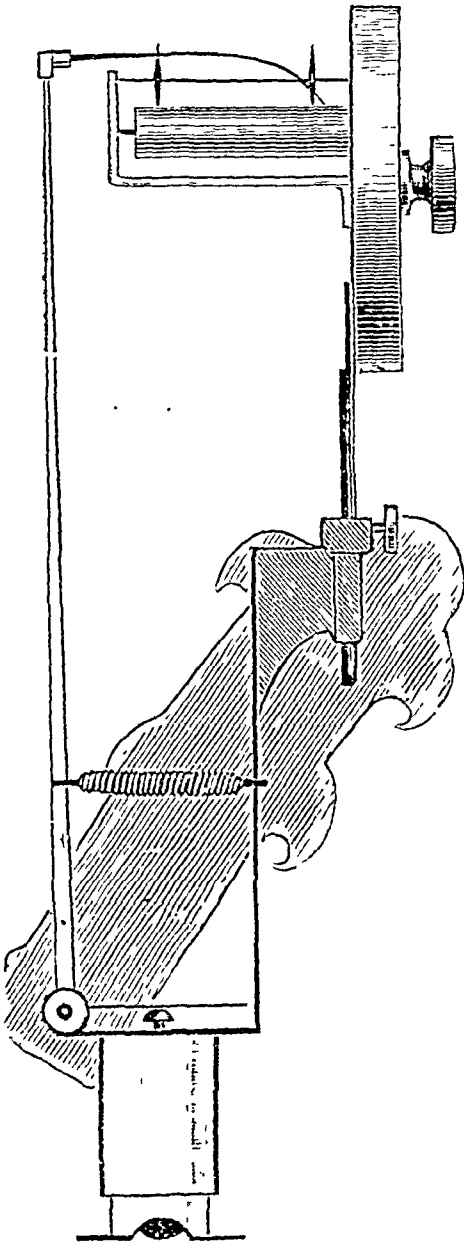
Read by title in the Section on the Practice of Medicine at the Thirtieth Annual Meeting of the American Medical Association, at Cincinnati, May, 1888.

BY ROBERT T. EDES, M.D.,
OF WASHINGTON, D.C.

The defects of the different forms of sphygmograph in use are so well known to those who have worked with that fascinating, but capricious instrument, that I will not formally set them forth, but advert to them in connection with the description of the devices employed to avoid or minimise them.

This sphygmograph consists in a base composed of a piece of metal tubing with a broadened foot, sliding within another, and supported by a pretty stiff spiral spring. This slide and spring are intended only for the support of the instrument and regulation of the pressure, but in no way for measuring the pressure. Within this base moves the pad or plunger with a stem. The top of the stem bears against the arm of a bent lever, the long or writing arm of which is made of wood for the sake of lightness, and which carries on its summit the writing needle. The smoked paper is carried horizontally under the needle and receives the trace.

Pressure is made by a fine spiral spring attached to the long arm of the lever.



carries a certain, or rather uncertain, proportion of the pressure made by the wide base upon the neighboring tissues over to the pad, so that the graduations on the sliding stem can never represent the pressure on the artery alone, but on the neighborhood, and especially on the radius and the tendon of the flexor carpi radialis. These criticisms may not apply to the other form of base used with the Pond.

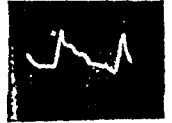
The lever in this instrument is but one, and there is no arrangement by screw or otherwise for adjustment of the pad to the writing levers to suit different degrees of the pressure.

FROM THE SAME PULSE.

Marey. - - -



Pond. - - -



As taken by new Sphygmograph.



Same, magnified vertically and reversed.



As a result of this we have one apparent disadvantage and several real advantages. The latter are: First, that the position of the tracing upon the paper is itself an indication and record of the pressure upon the artery, so long as the spring remains the same. Any given pressure exerted upon the pad will always draw the needle to the same place. The pressure may be varied while the paper is in motion, and its effect on the tracing thus becomes evident; or what takes but little more time, and is more elegant, several tracings at different pressures may be taken on the same slip. This implies, as one familiar with

by the action of the artery, thus making the elevations higher and the depressions lower than they should be. I cannot see why this instrument, leaving out the error of friction, should not give an absolutely faithful transcript of the curve which is described by the surface of the artery.

Errors due to looseness of joints are also avoided.

The want of distinctness in the tracings would, however, be far more than an offset to all these advantages; would, in fact, make the instrument almost worthless, if it were not for a device never before introduced into sphygmography. It is not original with me, but depends upon a suggestion from my ingenious friend, Dr. William P. Bolles, of Boston. It is the use of a cylindrical lens for reading the sphygmograms. This multiplies the amplitude of the tracings in the vertical direction about three times (or a stronger one might be used which would give four or five). The tracings which had before had so little variation in level as to seem meaningless, at once assume the appearance which will be recognized at once as corresponding more or less nearly to the common form.

The lens I have employed is composed of two of the strongest plano-convex cylindrical glasses, having together a focal length of 5 cm. They were procured for me square, that is before being mounted in the round frames in which they are supplied to test glass cases, by my friend, Dr. Swan M. Burnett, and mounted with the plain surface in apposition.

With the arrangements as now made which could obviously be varied considerably, the lever (short arm .9, long arm 10.2), amplifies about 11 times and the glass three or more, according to its position, thus giving 33 in the whole, or about that of Pond.

$$\frac{\text{Product of long arms}}{\text{Product of short arms}} = \frac{4.9 \times 3.0}{4 \times 9} = 33.3.$$

With the strength of spring used the pressure needed to start the writing, or to make the needle write near the lower edge of the paper is 30 grams; near the upper edge 90; and in the middle 50 to 75. This range seems to be sufficient for ordinary pulses, but it will probably not cover the whole range required for exceptional cases. It certainly will not admit the high range spoken of by Marey and Burdon-Sanderson, but on the other hand, Brondel says it is very rare that pressures of 80 and 155 are required. It would not be difficult to have a second spring to be used in exceptional cases, or even for the higher range of pressures, so that the tracings might be written on two scales, like the two staves for music, instead of on an entirely indeterminate one as at present with the adjustable instruments. The higher scale may also be obtained by shifting the spine to a higher position on the lever.

The manner of holding and applying an in-

strument I believe to be of no little consequence. It is the ease of management and little trouble of the Pond, when used without the rest, which have made it so deservedly popular. The pads and straps of some of the others are sufficient to prevent their being freely employed, and thus acquiring a real clinical value, and I knew of an instance where the use of the Pond was nearly abandoned in a hospital, because it could not be made to work with the arm rest. I believe the almost trivial device employed with this instrument makes this even more convenient than the Pond.

This is a slip of metal connecting the base with the upright that carries the clock-work, and acting as a brace, which is so curved, and supplied with side pieces as to fit on the fore finger. The instrument is thus carried on one finger, while the middle finger can feel the artery if desired. While the instrument is applied, the thumb can stop and start the clock-work, and the left hand is free to introduce and receive the paper; or be itself the object of examination.

I submit a number of tracings which may be examined with two or three of the highest cylindrical lenses to be found in the test case of the ophthalmologists. They are not intended to illustrate types of disease, but simply to show the working of the instrument. It will be noticed that they read in the opposite to the usual direction. This is because the clock-work of a Pond's sphygmograph, made to work with a different arrangement of levers, was used. If a new piece of clock-work were made it would, of course, be arranged to run in the usual direction.

GRADATION OF LENSES.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 8, 1888.

BY DUDLEY S. REYNOLDS, A.M., M.D.,

PROFESSOR OF GENERAL PATHOLOGY, HYGIENE, AND DISEASES OF THE EYE AND EAR, IN THE HOSPITAL COLLEGE OF MEDICINE, MEDICAL DEPARTMENT OF CENTRAL UNIVERSITY OF KENTUCKY, LOUISVILLE.

The lenses employed for testing refraction, as they are obtained from the best makers, are graded by three separate systems, namely: by focal lengths in inches, by focal lengths in metres and centimetres, and by the radius of curvature, on the basis of a unit representing the maximum angle of retraction, which, according to the old astronomers, is equal to the quadrant of a sphere, or 90° of its circumference.

A series of lenses constructed of crown glass, having an index of refraction of about 1.53, each lens representing a definite fractional part of the unit, may be said to represent the only scientific series of lenses, because these are graded into such fractions as to represent a definite angle of radius, as, for instance, the most powerful convex lens in the

series in ordinary use is one-half, and represents, not, as some suppose, 2 inches of focal length but, in fact, 45° of radius of curvature, or half the unit of astronomical refraction.

Now, some recognition must be given to the size of the disc represented by the circumference of the unit, or the lens whose refracting angle represents 90° , may be wholly unsuited to the purposes intended. To arrive at uniform results, it is manifestly clear the instruments employed should be identical, and all the conditions governing the process precisely uniform. To establish a standard series of lenses, Vitileo and Baptista Porta constructed spheres of crown glass and, by experimental tests, were able to determine that the maximum angle of refraction of light falling upon the surface of such a sphere equalled one-fourth of its circumference, or 90° of its radius. A separate lens, so as to represent the same amount of curvature, it was found would focus light at a distance nearly equal to one-half the diameter of the sphere from which this segment was taken; that is to say, light passing through such a segment, united at a point distant from the nodal point of the segment itself equal to one-half the diameter of the sphere of the same radius.

Now, if a sphere 2 inches in diameter, and another sphere 3 inches in diameter, be taken for experiment, it will be found that the focal length of the quadrant of the first sphere will be about 1 inch, whilst that of the second will be about $1\frac{1}{2}$ inches; so that any attempt at grading lenses by focal lengths must necessarily be utterly unavailing for scientific purposes.

Few who have not made the experimental test would be inclined to recognize the difficulties attending the measuring of the actual focal lengths of lenses. If a dark box, into one end of which the skylight, through an open window, is allowed to pass, the intercepting lens will, if the box be small, collect and refract only the central portion of the pencil of rays entering it, and the result will be, if the light be bright, a stronger penetration and greater focal length will be registered than might be obtained by making the test with a series of points, of artificial light taken from a white or frosted background. If a large box be used—always presuming, of course, that the lining of the box shall be perfectly black, with a dead finish, so as to prevent reflection—so much light will have been absorbed before the focal point has been reached that it will be exceedingly difficult to define the focus, and, therefore, errors of 2 or 3 inches in measuring are commonly committed. If there be any asymmetry in the grinding of the lens, this will not appear in such a test. If two dotted lines, intersecting each other at right angles in the form of a cross, be employed, more definite results can be obtained, because, if any one of the dots in either of the two crossed lines should appear of irregular form on the polished side of the

frosted glass register, it would at once show asymmetry in that part of the lens; and if, by revolving the lens, it should turn out that points in corresponding portions of the several lines were distorted, the asymmetry of the lens would thus be established beyond doubt, and might even be designated by a mark on the surface to show the precise part defectively ground.

If any coloring matter be present in the glass, it will cause halos in certain portions of the field represented by the dotted lines on the frosted glass register. To make this test, of course it is necessary to have an instrument constructed with an opaque metallic disc, perforated by circular openings across the centre, and on the face of the disc another line formed in a similar manner, at right angles to the first, so that they shall cross exactly in the centre of the disc. Against the surface of this perforated metallic disc a piece of frosted glass should be placed. A lamp flame or a gas jet will furnish the best source of illumination. Having a positive lens between the source of light and the perforated disc, uniformity of illumination may be secured. The lens to be tested should then be placed in a clasp on a beam, supplied with an arrangement for sliding both the disc containing the perforated plate and another frosted glass disc at the opposite end of the beam, upon the surface of which the points of light refracted by the lens being tested, at the centre, are collected. On the surface of the beam, from the centre to the distal end, the different points at which the light is focused on the registering or collecting disc may be marked in a scale, which shall be used for the determination of the refracting powers of spectacle lenses, or other lenses of similar character, which it is designed to measure. Snellen's phakometer fulfils these indications, and is, in its improved form, the most accurate and satisfactory instrument for determining the quality and the refracting powers of lenses, whether spherical, cylindrical or compound, yet devised.

In his preface to the English translation of Scheffler's "Theory of Ocular Defects and of Spectacles," Prof. Brudenell Carter, of London, says: "It is well known that much dissatisfaction has been felt with the irregular intervals between the lenses in the test-cases commonly sold, and that great confusion has been produced by the varieties of the so-called inches in which focal lengths have been expressed." At the International Ophthalmological Congress at Paris in 1867, Zehender proposed to adopt a new system of gradation by which lenses should be known by numbers, the No. 1 to represent a focal length of 240 centimetres, the No. 2 to represent a focal length of 120 centimetres, the No. 48, which is the third of the series, to represent 5 centimetres of focal length. The equivalents of this series, it may be seen, according to the other systems of gradation

now in use, would have to be found by an attempt at reducing the centimetre to some other kind of measure; but this is not all: the metre itself is, according to the commission which recommended and established it as a unit of measurement, approximately the ten-millionth part of the earth's quadrant; then the one-hundredth part of this unit must be an exceedingly indefinite quantity.

I spent the summer of 1878 in Paris. During my stay in that city I devoted considerable time to studying what is called "the metrical system" of weights and measures. I sought, at the dry-goods stores, sticks representing the metre, such as are used in measuring cloth. I bought three tape-lines from three different manufacturers, upon the surface of which were marked metres, centimetres and millimetres. I got three Verniers from different instrument-makers. By actual comparison, the marks on the three Verniers did not correspond. In taking a centimetre of space upon them, there was a total difference of from 1 to $1\frac{1}{2}$ millimetres. The tape-lines varied much more than this, while the metre sticks differed more widely, both in total length and in the fractional marks upon their surface. Just think, then, what confusion must necessarily result from any attempt at determining the refracting powers of a lens by establishing its focal length, imperfect as are the means under the most favorable circumstances for testing.

Now, I am aware that difficulties beset all new ventures which partake of the nature of reform; yet I venture to suggest the propriety of casting aside all former methods of grading lenses, and of adopting an entirely new method which, to my mind, has the advantage of both simplicity and utility. I propose, instead of taking the quadrant of the sphere as a unit of refraction, as the astronomers did in the time of Roger Bacon, who was the real inventor of spectacle lenses, to begin with the lowest perceptible angle of refraction, and calculate by that means alone the refracting power of the whole series, from $5'$ to 90° . For example, I would designate the lens which in the metrical system is called one-fourth dioptré, and which according to the astronomical refraction represents about the $\frac{1}{16}$ part of the quadrant, or a radius of $33' 12''$, by the angle of refraction of $30'$. This, of course, would not be an exact equivalent, but a far more symmetrical proportion inside the maximum angle. I would begin, in fact, with a lens of just one-half that angle, and proceed something after this plan in the regular order of increase of the refracting power, namely: the weakest lens of the series might have a refracting angle of $15'$, the next $30'$, and the next 1° . Now, this lens of 1° of the angle of refraction would correspond almost exactly to $\frac{1}{16}$ part of the quadrant. Its radius would be about $1^\circ 6' 24''$, at least that is the exact radius of the lens in the metrical system marked 0.50

D. Proceeding in this manner, the next lens in the series should represent $1^\circ 20'$ of refracting angle. This corresponds to $\frac{3}{4}$ D., or $\frac{1}{8}$ of the maximum angle of the old system, and represents $1^\circ 39' 36''$ of radius. 1 D. of the metrical system corresponds to $\frac{1}{16}$ of the old unit, which has an angle of radius equal to $2^\circ 15'$. Instead of this, we should have an angle of refraction represented by 2° simply. Proceeding further by the separation of lenses according to the refracting angle of $30'$ until an angle of 6° has been attained, the interval might then vary by 1° until 20° are attained; then 2° should separate the lenses of the series between 20° and 30° ; then 3° from thirty to fifty, and 5° from fifty to ninety. A series of lenses projected upon such a plan would afford the greatest facility for testing the state of refraction in the eye, and would correspond scientifically to Snellen's plan for determining the acuity of vision upon the basis of a visual angle of $5'$.

I present this matter for your serious consideration, in the hope that you will discuss it, if not publicly, at least amongst yourselves. I presented it in a brief manner to the Ophthalmological Section of the Ninth International Medical Congress. I have to-day considered the question from a slightly different standpoint. I shall attempt to give it more practical illustration at Newport next year if I have the good fortune to be able to meet with you.

SARCOMA OF THE SCALP.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY P. S. CONNERS, M.D.,
OF CINCINNATI, OHIO.

Primary sarcoma of the scalp is of such infrequent occurrence that I trust I may be pardoned for reporting to the Section a case recently under my care.

In the latter part of October, 1885, I was consulted by Mrs. S., æt. 25, white, resident of eastern Kentucky, who stated that fifteen years before she discovered on the back of her head a small hard lump of the size of a bean, not painful on pressure. For thirteen years there was no noticeable change in the tumor, but at the end of that time it began to enlarge, and continued to do so steadily until the time of her confinement (five months before I saw her), when the mass was as large as a goose-egg. Since delivery its growth had been very rapid and attended with pain, at times severe. The woman was much emaciated and greatly enfeebled. The tumor occupying the occipital region and looking much like a second head, was somewhat movable from side to side, and upon palpation pseudo-fluctuation was detected. It measured antero-posteriorly 17 inches, laterally 15 inches. Its greatest circumference was 21 inches, and its

least circumference, at the line of junction with the head, was 15 inches. The tumor was removed on the 23d of October, two lateral narrow flaps and a posterior one being made, and the mass readily and quickly separated with the fingers from the pericranium, to which it was nowhere adherent. Hæmorrhage was quite profuse, though from no large vessels, was easily arrested by the application of hot water. The flaps when brought together covered in the entire bared surface, small drainage tubes were brought out at the ends of the base of the now inverted T-shaped wound, iodoform dusted on and a thick layer of absorbent cotton applied. The mass removed weighed almost 5 lbs., and upon examination proved to be a spindle-celled sarcoma. The drainage tubes were removed on the fourth day, and the sutures (silk) on the eighth, when union was found to have taken place. The woman left for her home on the fourteenth day.

For eighteen months (until May, 1887) she continued well, but at the end of that time noticed a small tender spot and soon after a hard lump, which increased slowly for three months and then more rapidly. She was about a month advanced in pregnancy when the recurrence was observed. After her confinement (in the middle of January, of this year) excessively rapid growth took place, and when I saw her, on the 1st of March, the mass measured antero-posteriorly 18 inches, laterally 17½ inches, with a greatest circumference of 25 inches. Its surface was of a bluish color and several large veins ramified upon it. On the 3d of March I removed it, making no effort to save any covering, but cutting along the line of junction with the head. The pericranium was in places included in the diseased mass and was taken away. After the bleeding (less profuse than at the time of the first operation) had been checked, the edges of the wound and the denuded surface were cauterized with the Pacquelin button. The mass after removal weighed 7½ lbs. Dry borated dressings were applied. At the end of the second week erysipelas of the left side of the face, extending up onto the scalp developed itself but ran a mild course. Five weeks after the operation the patient left for her home, the granulating wound being in excellent condition.

The points of special interest in this case are the years—long absence of any change in the original nodule, the marked influence of pregnancy and lactation upon the growth of the tumor, both primarily and in recurrence, and lastly the immense size of the growth. The scalp is not seldom involved in sarcomata affecting the skull, but a primary tumor of such character located in it is exceedingly rare. As when situated elsewhere, in spite of removal and re-removal, the disease may be expected to recur and ultimately destroy life, but operative interference may result favorably, especially if timely. No hard, indolent lump in

the scalp should be permitted to remain, even though for years in an unchanging and unchanged condition. Probably benign and to continue such, it may not be so now or in the future.

MEDICAL PROGRESS.

STERILIZED MILK.—By means of numerous experiments DR. CAILLE has reached the following conclusions: 1. The preparation and administration of sterilized milk can be managed in any well regulated household. 2. The boiling of milk for twenty or thirty minutes under slight pressure, in small bottles hermetically closed, is all that is necessary to practically carry out the principle involved in sterilization; *i. e.*, to destroy the germs of fermentation. 3. The essential material are small bottles with Soxhlet's stoppers, and a tray. 4. Milk boiled in small bottles for twenty minutes and immediately closed by rubber, cork or cotton stoppers will keep sweet, if put on ice for several days. 5. The boiling of milk in the ordinary way is faulty. All milk for infants' and children's use should be boiled in small bottles in a water bath for twenty minutes, when it will keep much longer than if boiled in the ordinary way and the usual length of time. 6. The transportation of milk during the summer months should take place in refrigerator cars. This should be secured by legal enactment. 7. An apparatus for properly boiling and preserving milk for infants' use should be at once introduced into every well regulated household. The essential utensils are: small bottles (5 or 6 oz.) with combination stoppers (Soxhlet's), and a tray of tin or galvanized iron—all procurable for a very moderate sum. A good brush for cleaning the bottles should accompany each set; also a tin dipper, with perforated inner bottom for warming the milk before giving it. Ten spare bottles with a few ordinary nipples would make the outfit complete. To facilitate handling and transportation such an outfit could be packed in a wooden box one foot square and high, and provided with a common handle. All the other utensils, as advised by Soxhlet, are superfluous; the more so as complicated apparatus is difficult to introduce for family use, and is soon discarded. Feeding tubes are difficult to keep clean, and should not be used. The ordinary nipples, for sale everywhere, will fit the bottles and can be turned inside out and thoroughly cleansed. It would be a good plan to stamp into the cover of the boiling pot: *Boil for 20 minutes*, this being important in view of the fact that printed labels are liable to be lost or mislaid.—*Diætic Gazette*, April, 1888.—*Sacramento Medical Times*, August, 1888.

THE POSOLOGY OF QUININE.—MR. THOMAS

CHRISTY has received a letter from a Ceylon correspondent which throws a strong light upon the above subject. The writer had been trading in the island named, during the wet season, and caught an obstinate ague, which resisted the ordinary treatment with quinine. The patient then went to Newara Eilgie for the sake of change, and, being again attacked, called for the services of the assistant military surgeon of the station. This practitioner laughed at the account of the dosage of the alkaloid tried, and prescribed two half-spoonful doses of the sulphate in sherry, which effected a complete cure. Accounts of other cases are also given, including that of an English lady who suffered from ague and shivering constantly, even in the hottest weather of England. She was quite cured in a week by somewhat smaller doses than the above, and even faced a winter without any fear. Similar quantities of the medicine are recommended in low fever, and when taken in sherry or brandy on waking are stated to produce a delightful and lasting glow in the body, which smaller doses are powerless to effect. No unpleasant after-symptoms have been observed. The writer also calls attention to the circumstance that the same amount of quinine in pill or powder will not bring about the same happy result, and suggests that the differences in the therapeutic action referred to are worthy of more study.—*Gaillard's Medical Journal*, August, 1888.

CREOLIN AS AN INTERNAL MEDICINE.—DR. A. HILLER, Privat Docent in Breslau, publishes some remarks on this subject in the *Deutsche Med. Wochenschr.*, July 5, 1888. The antiseptic properties and comparative innocuousness of creolin, as used externally, have been made known by Fröhner and E. v. Esmarch, and their conclusions are also confirmed by Dr. Hiller. But creolin is of the greatest use in various diseases of the stomach and intestines. Its anti-zymotic influence comes out most clearly when employed against the numerous processes of fermentation and decomposition which accompany most, if not all, such diseases. "Its freedom from poisonous effects, and its perfectly non-irritant effects, make it an ideal antiseptic for the above group of diseases." Dr. Hiller asserts that creolin, given in strong gelatine capsules, in doses of between 3 and 15 grains three times a day, promptly and certainly relieves meteorism from whatever cause, whether constriction, typhilitis, catarrh, atony, or ileotyphus, and hopes thus to prevent perforation in the latter case. It was found equally efficient in simple flatulence, gastric dilatation, acute and chronic gastric catarrh, and diarrhoea. Given in a case of tænia and one of oxyuris, its action was prompt and efficient as an anti-parasitic. But creolin appears unfitted for children, owing to their inability to swallow capsules. Creolin may also be used to irrigate the rectum in carcinoma cases; used

thus in solutions of 1 in 500 it acts like a charm in purulent cystitis (Jessner, *ibid.*, 1881).—*British Medical Journal*, July 21, 1888.

GALVANIZATION OF THE THYROID IN EPILEPSY.—In the *Rivista Sperimentale di Freniatria*, vol. xiii, Fasc. iii, DR. CELSO SIGHICELLI gives details of some cases of epilepsy which he treated by galvanizing the thyroid. He was induced to try this plan by reading Albertoni's description of convulsive attacks observed in dogs whose thyroid glands had been excised. These paroxysms were among the earliest symptoms of the characteristic cachexia following that operation, and bore a close resemblance to genuine epileptic fits. Dr. Sighicelli himself, moreover, had in two cases of mental disease noticed signs which appeared to him to indicate that changes in the thyroid had a direct influence on cerebral nutrition, and might thus cause psychical disturbance. He was, therefore, led to think that epilepsy might in certain cases be dependent on some abnormal condition of the thyroid. Having found electricity useful in hypertrophy of the gland, Dr. Sighicelli thought that it might possibly do some good in rectifying functional disorder. He accordingly applied a constant current of moderate intensity to each lobe of the thyroid alternately, at first for two or three, and afterwards for four or five, minutes at a time. The patients, seven in number, were all of the male sex, and in all of them the disease was of long standing. In three no visible effect whatever was produced; in the remaining four there was at the beginning of the treatment a sudden increase in the number of the attacks, but this was soon followed by a diminution in their frequency. Both the length and the severity of the paroxysms were greatly lessened, and when they did occur they were not accompanied by tonic spasms. There was almost entire disappearance of the phenomena which had previously preceded and followed each fit, and the patients were much improved in mind and disposition. In the two cases in which the success of the treatment was most marked, the amelioration began to show itself about a month after the first application.—*Brit. Med. Journal*, July 28, 1888.

POSTURE IN LABOR.—DR. FRANCISCO ALONSO RUBIO, in a paper read before the recent Spanish Gynecological Congress, laid great stress upon the important part that the posture of the patient plays during labor, both physiological and abnormal. During the first stage he merely keeps the patient from going from one room to another, to avoid catching cold. During the expulsive stage, though he prefers the supine, or at least a horizontal, position as a rule, he changes it to a sitting posture where there is asthma or cardiac weakness, also where the pains have become inert through uterine fatigue. Where there is any

version of the uterus, it is necessary to pay due regard to its direction. Thus, if there is anteversion, the patient should be placed on her back; if there is lateral version, she should lie on the side opposite that to which the fundus uteri is inclined, so as to bring the foetal axis to coincide as nearly as possible with that of the pelvis. It is of course a recognized fact that a change of posture will frequently facilitate the descent of the head even when there is no abnormality either in the position of the child or of the direction of the direction of the uterine axis. When the foetal position is transverse, the patient should be laid on the side opposite to that occupied by the head, with a pillow under the abdomen. The adoption of the genu-pectoral position has frequently been found of service by Dr. Rubio. When there is prolapse of the cord, and it is being dragged upon in a dangerous manner, he raises it above the head and keeps it there during several pains, the woman being placed in the genu-pectoral position. Again, in complicated presentations, he has found this the best posture for their reduction, and in arm and shoulder presentations, where the amniotic liquid has escaped, and the practitioner in attendance has been unable to insert his hand and turn, Dr. Rubio, by the adoption of this position, has found it possible to execute the necessary manœuvre.—*Lancet*, July 28, 1888.

MASSAGE IN INVETERATE ULCER OF THE LEG.
—APPENRODT, of Clausthal, in a number of cases that had resisted all ordinary treatment, got successful results from the persistent use of massage. The leg should be carefully cleansed and disinfected before beginning, then light *effleurage* is made below the knee, reaching gradually downwards; only light pressure should be used; the appearance of lymph-exudation about the ulcer is the first sign of its good effects. The best material to employ in massage is lanolin (Jaffé and Darmstaedter), because, owing to its tenacity, it does not irritate, but protects, the skin. After massage, the skin is again well washed with soap and water, and disinfected; the ulcer, and any excoriations, are dressed with lanolin on lint; over this is placed a sheet of silk, and a cambric bandage is applied over all. The addition of disinfecting substances to the lanolin is not necessary, as they usually irritate the skin, and impermeable coverings must be altogether avoided. Under this simple treatment the swelling soon subsides, desquamation ceases on eczematous places, and granulations rapidly spring up on the ulcer itself. It is but rarely advisable to apply zinc oxide and starch to the former, or nitrate of silver to the latter. In spite of the abundant granulations, it takes a long time before the ulcer is healed, owing to the callosity and immobility of the skin, and in suitable cases Reverdin's trans-

plantations may shorten the process. The massage must be continued for a good while after a cure has been effected, in order to restore as far as possible the natural condition, and prevent relapses. The patient should make free use of the limb during the treatment, for it will be found that the pain and tendency to œdema soon cease.

HYPODERMATIC USE OF THE ALKALOIDS.—The Paris correspondent of the *N. Y. Medical Journal* writes: The rapidity of the absorption of alkaloids by the subcutaneous tissue is not at all well known, and M. CHOUPPE has been making some interesting studies in regard to this matter. It is of the utmost importance that we should know the exact dose of drugs that we use by hypodermic methods. From the experiments made it is certain that, when the usual doses of the different alkaloids, dissolved in equal amounts of liquid, are injected, they act with quite a difference as to the time it takes to produce an effect on the general circulation. Morphine, for instance takes as much as from six or seven minutes to produce its sedative action, while apomorphine acts in four minutes. Some of these facts are well known, but it is very important that we should know more exactly than we do the precise time it takes to produce the therapeutic effect of all the alkaloids given hypodermically; so that we may not fall into the rather common error of giving fresh doses before the one first given has had time to act.

ANTISEPTIC OINTMENTS FOR VAGINAL TOUCH OR FOR DRESSING EXCORIATIONS, FISSURES, ETC.—DEMELIN recommends the following formulæ:

| | |
|-----------------------------------|------------|
| R—Vaseline | 30 parts. |
| Boric acid finely pulverized | 4 " |
| R—Vaseline | 120 parts. |
| Binioidide of mercury | 1 part. |
| R—Vaseline | 30 parts. |
| Finely powdered iodoform or iodol | 4 " |
| or salol | 4 " |
| R—Vaseline | 30 parts. |
| Creasote | 1 part. |
| R—Olive oil | 100 parts. |
| Crystallized carbolic acid | 10 " |

The carbolized oil may be advantageously used in lymphangitis of the breast.—*Revue Générale Clinique et de Thérapeutique*, June 28, 1888.

TREATMENT OF TYPHOID FEVER BY COLD BATHS.—LIEBERMEISTER, of Tübingen, lays down the following propositions: (1) In the majority of fevers the increase of temperature constitutes the danger of the patient; (2) it is the duty of the medical attendant to combat the elevation of the temperature by suitable means; (3) the basis of antipyretic treatment consists in the direct abstraction of caloric by cold baths; (4) there are cases in which antipyretics may be used.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 18, 1888.

THE LANGUAGE OF MEDICINE.

"In medicine," says an author of a recent work,¹ "we may often obtain more practical benefit from the study of some word with an account of the errors involved therein, than from the study of a new theory which rises like a balloon only to burst like a bubble." Dr. Campbell has written what may be called a synopsis of the linguistic history of medicine, which will prove especially valuable to those that have "small Latine and lesse Greek." The claim is made that in studying mathematics or grammar the pupil begins with definitions of the new words to be employed, and that the student of medicine also could save much valuable time by first mastering the meaning of the technical terms by which the principles of the science are to be carried into his mind.

But if it be meant that the student of grammar or medicine must get into his head as soon as possible the meanings of the technical words and terms with which he must come in contact in his study of a language or of medicine, and without applying them as he goes along, we are inclined to think that the student is not wisely advised. The study of definitions of words of a language that he is constantly using is a very different matter from studying definitions of a language that is only beginning to be learned, and it would be a most unprofitable expenditure of time for a

student, before he enters fully upon the study of medicine, to lumber up his memory with the significations of words that are to be applied afterwards. In learning to read a dead or a foreign language the pupil acquires his vocabulary gradually, and as he needs it. He studies to better advantage if he look in the dictionary for each unfamiliar word as it occurs, than if he commit to memory a list of such words before each lesson. At best the commission to memory of a list of words with their meanings is a piece of drudgery, which is scarcely lessened by the knowledge that there will be use for these words in the future. That words must be understood before the thoughts that they convey can be comprehended goes without saying. In the process of learning definitions, however, the student is not walking, but crawling; he must not be expected to assume the erect position and walk before he has mastered the principles of crawling. Assuming that the baby that can only crawl could read, would it hasten his walking to read a work on the mechanics of walking? In laying the foundation of a building the workman does not use his blocks of stone till he is ready for them.

That the history of the language of medicine is valuable for instruction no one can doubt. It has been said that the more languages one knows the more easily are other languages learned; a saying based upon the fact that different languages have much in common. As regards its technical words, medicine, like other sciences, is cosmopolitan. When a new word is coined to express an idea that has not had expression before we do not stop to translate it; we use the original coinage. The translation into English of a new coinage of another language is very like our translations of the metric quantities: it makes so much, with something over. It is better, therefore, to use the word as we find it. And just here the English language has, or seems to have, an advantage over other languages. French, Italian, Spanish, and other writers, the German to a less extent, seem to think it necessary to alter the architecture of all new words that fall into their hands.

Every one must have noticed the difference in the pronunciation of medical words by medical men. This is even true of words derived from the Latin, or of Latin words still unchanged. Medical men are not always supposed to be familiar with modern languages, and the mispro-

¹The Language of Medicine. A Manual giving the Origin, Etymology, Pronunciation, and Meaning of the technical terms found in Medical Literature. By F. R. Campbell, A.M., M.D.

nunciation of these is to a certain extent excusable. We believe there is a sentiment, or an idea, that every medical man must know something of Latin. Dr. Campbell says that the English method of pronouncing Latin should be learned by every student contemplating the study of medicine. "Medical technical terms should be regarded as English words borrowed, for convenience sake, from the classical languages." He claims that the use of the "so-called Continental method" would sound pedantic, affected, and ridiculous; "such familiar words as *vapor*, *cicatrix* and *vagina* would scarcely be recognized if pronounced *wahpör*, *keekahrtreex* and *wahghecnah*." We think not. Even a teacher of the Continental method would be at loss to know what was meant by such unheard of sounds. There are two things to be said in favor of the Continental method of pronouncing Latin: The Germans, the greatest students of the dead languages use this method, and they do not, as Dr. Campbell implies, pronounce Latin according to the sounds of the letters of the German language. In the second place, one might safely offer a handsome prize to anyone that will scan correctly five lines of Latin poetry by any other method of pronunciation than the Continental. The majority of medical terms that are pure Latin words, however, may be regarded as English words in so far as the pronunciation is concerned.

BLOOD STAINS.

Blood stains often play an important part in medico-legal cases. Much of the existing literature upon this subject has outlived its usefulness, and the medico-legal expert or the lawyer that bases his conclusions on such is liable to err. An important contribution to this subject has recently appeared—"Comparative Studies of Mammalian Blood; with special reference to the Microscopical Diagnosis of Blood Stains in Criminal Cases," by DR. HENRY F. FORMAD, of Philadelphia.

Is it human blood? is a question that sometimes involves serious consequences. In determining this question in regard to blood stains, it should be remembered that blood stains are best seen by artificial light. The liquids used for re-moistening and disintegrating dried clots of blood must be of such composition that no harm will be done to the corpuscles. If one wish simply to determine the presence of blood corpuscles, then

water, oil, alcohol, glycerine, etc., may be used. But to preserve or restore the shape of the corpuscle some other liquid must be used, such as Moleschott's, Müller's, Radnew's, etc. Dr. Formad finds that in his hands Müller's fluid (composed of 2 parts of potass. bichromate, 1 part of sodium sulphate, and 100 parts of water) and very strong solutions of caustic potash give the best results. To obtain the largest quantity of unaltered measurable corpuscles from old dried clots and blood stains, it is advantageous to apply moisture and slight heat for several days. His procedure is as follows:

A small granule of the suspected blood or a fibre from the blood-stained fabric is placed on a glass slide in a drop of a 30 to 35 per cent. solution of caustic potash and covered with a cover glass. If the blood-stain was recent, the disintegration of the clot commences at once, and the isolated corpuscles separate and swim swiftly through the liquid if the stage of the microscope is slightly inclined. It is quite interesting to observe how perfectly well-shaped blood discs will tear themselves away from the original formless brown mass. In direct proportion to the age of the stain, from one to within ten days, the softening of the microscopic blood mass and the isolation of the corpuscles is protracted. In dried blood older than ten days the ratio of softening or disintegration cannot be well observed, and a stain of two years old behaved like one of ten days.

The examination can be made under comparatively low amplification, such as 300 to 500 diameters; but when measurements are necessary, then an immersion lens, giving a magnifying power of about 1,000 diameters, better be substituted. Sometimes but a few well-shaped measurable corpuscles are seen, but quite often, in successful preparations from recent blood stains, nine-tenths of the corpuscles in a certain microscopical field will appear quite perfect and fit for measurement.

If the blood specimen is slow in disintegrating and the corpuscles imperfect in appearance, then he adopts the following procedure: The glass cover beneath which the blood fragment is macerating on the reagent is ringed with a little oil, or, still better, with some cement, in order to fasten it and to prevent evaporation, and placed in a moist chamber (a glass vessel, lined with moist paper, and covered). The chamber itself is put

in a water-oven (incubator such as used in bacteria investigation) and subjected to uniform slight heating, not exceeding 100° F., and kept there from one to three days, or as long as is necessary to obtain the desired result, the specimen being examined from time to time. Care must be taken not to overheat the preparation, and to guard against evaporation of contents, *i. e.*, of the liquid between the glass slide and glass cover in which the blood specimen macerates. A number of experiments may be made simultaneously, some of the blood specimens being treated with a strong solution of caustic potash, others by Müller's fluid, the latter often succeeding in very old blood clots to restore shrivelled and to isolate perfect corpuscles when the former fails. While the Müller's fluid with glycerine must be diluted with water in order to obtain the desired specific gravity, a peculiarity in the action of the caustic potash solution must be borne in mind, *viz.*: that the stronger the solution the better its effect, whereas weak solutions of this reagent (caustic potash) destroy the blood corpuscles or reduce them in size by making them spherical. A strong solution (30 to 35 per cent.) gives most beautiful results. The red blood corpuscles have an absolutely natural appearance; retain their perfect color and shape or sometimes resume it, if previously lost, form rouleaux, show the normal biconcavity of the discs, and even show normal diameters on measurement; in short, behave like normal blood. Such is the case where the blood stain was a recent one, and, in fact, the rapid appearance of such good and perfect pictures under the microscope are indications of the recency of the blood stain.

Obviously, however, we cannot draw conclusions and make a diagnosis unless we take into consideration the shape of the corpuscles, the abnormally small and disfigured ones being excluded. "*At least 500 measurements should be made in establishing the average diameter.*" Probably no one that has read the works of the late Dr. J. G. Richardson will question the immense importance of micrometric measurements in all medico-legal cases involving blood stains. Lacour and Masson assert that "one can certify that corpuscles found in the blood under examination are in all points identical with those of man or of the guinea-pig, if they measure more than $1-127$ mm." Malinan, of Tiflis, a prominent expert, testified

in court as follows: "If we find corpuscles in blood stains, the diameter of which is 0.0077 mm. or more, then we can conclude that it is in all probability human blood." The consensus of opinion is that the *expert* has the right to express himself quite definitely as regards the probable identity of blood.

The paper of Dr. Formad is a very interesting one, and may be found in the *Journal of Comparative Medicine and Surgery*, July, 1888. It will be of special interest to medico-jurists and to microscopists.

In the *N. Y. Medical Journal* of August 11 Dr. SIMON H. GAGE calls attention to the fact that the red blood corpuscles of lamprey eels are very much like those of man in general appearance. They may be distinguished from those of the human, 1, by the presence of a nucleus, which is made apparent by drying, by acetic acid, and by usual reagents; 2, except in the embryo 9 to 10 mm. long, which would never be used for bait, the corpuscles are nearly twice as large as those of man.

PURE HEAT FROM COAL.

In the past two or three months an article on "The Direct Production of Pure Heat from Coal," taken from an English journal, has been extensively noticed and copied in the newspapers of this country. While there may be some valuable features in the system described, some of the statements are sufficiently extraordinary to deserve comment, if not severe criticism or unbelief. It seems that a Mr. W. A. Gibbs was called upon by some India tea planters to devise a method by which pure hot air, suitable for drying tea, could be obtained from waste wood or coal. The apparatus made by him, and which, it is claimed, fulfils all the requirements, consists of a brick chamber $5 \times 2 \times 2$, built upon the ground, with a feed and a fuel chamber at one end and a powerful fan at the other. Between the chamber and the fan are baffle plates, splitting plates, a standing bridge with perforations at the back, and a hanging bridge with perforations at the front. There are also a number of carefully proportioned inlets to the pipes, for supplying the exact quantity of air required to cause perfect combustion.

It is stated that when the fire was started and

in "good running order," there issued from the fan-mouth a column of hot air 12 inches in diameter, with a uniform temperature of 500° F. "No trace of smoke or discoloration was visible to the eye, nor any odor or taste perceptible." The reporter states that he held his face in this blast of hot air, at 500° F., and that, except for the very high temperature, he felt no inconvenience. It is not stated how long he held his face in the blast. That he could *hold* it there at all.

The most extraordinary thing, however, is the statement that the air drawn directly from the fire was *perfectly pure*. One can readily understand how the air could be kept free from smoke; but how was the carbonic acid removed? The coal being burned in the furnace, the combustion products must have been either carbonic acid or carbonic oxide, or both; and no increased supply of oxygen or nitrogen could have destroyed the carbon that would be present in some form or other in the escaping air.

A *pure* heat, or hot air, direct from coal might be advantageous in many ways, but one cannot accept the statements outlined above until the method is more clearly explained.

CHEMICAL PURIFICATION OF SEWAGE.

DR. A. PFEIFFER has recently contributed an interesting paper relating to the insufficiency of chemical processes for purification of sewage, to a German sanitary paper. In a general way he reviews the different methods that have been adopted for the chemical purification of sewage, and points out the dangers of the irrigation method of sewage disposal. It is now understood that the great danger from sewage water lies in the microorganisms that infest it, and Pfeiffer asks if the modern methods of purification as applied to the waste of towns and cities, have any real effect in clearing the sewage of these microorganisms.

We know, of course, that carbolic acid, bichloride of mercury, and other chemicals kill germs, but we know also that we cannot apply them on any very extensive scale. We cannot make the sewage strongly alkaline nor acid in order to destroy the microorganisms, because the fish in the streams would be destroyed, and the waters rendered useless and injurious. In Pfeiffer's opinion the other chemical methods that precipi-

tate the solid portions of the sewage are of very little avail, since they do not destroy the bacteria, nor remove the dissolved organic matters upon which they feed. He claims that sewage thus treated will in a short time regain all its offensive properties, and that the clarification is but a temporary expedient. He thinks it would be better in the case of rivers of large volume to discharge the raw sewage into the river than to erect extensive chemical works for its chemical treatment.

A STOIC OF SEVEN YEARS.

A remarkable case of concealment of severe injury occurred in Evansville, Ohio, on August 8th, according to the newspapers. It seems that the 7-year old son of Austin Coombs, took a revolver from his father's desk, and while playing with it accidentally discharged it, the ball taking effect in his abdomen. On his mother's return she questioned the boy, who admitted having discharged the revolver, saying nothing of the injury to himself. He having been forbidden to touch the revolver he was chastised by his mother, the boy standing the punishment without a whimper. Shortly afterward he slipped away to a room upstairs and prepared to change his clothes, the ones he wore being clotted with blood from the pistol wound. Toward noon he began to feel sick, and going into a side room lay down upon the floor. Upon being called shortly afterward to get some wood he replied that he could not and that he was sick. His mother going to him noticed for the first time that his clothes were covered with blood. After an examination she surmised the truth, and upon close questioning the boy admitted that he had shot himself. This was not until some three hours after the accident though, and the boy at last reports was steadily sinking.

It is not stated whether any effort was made to perform laparotomy. It seems remarkable that the injury, if seriously involving internal organs, did not cause more immediate and profound shock. That it did not is in favor of the opinion that an operation might have saved the child. At any rate, given a bullet wound of the abdomen, if the hydrogen gas test cannot be applied, the indications are to perform laparotomy.

DR. BRAMANN has been recognized as Privat-docent in surgery in Berlin.

EDITORIAL NOTES.

PELVIC CELLULITIS IN THE MALE.—In a recent number of the *Tidsskrift for Praktisk Medicin* Dr. SKJELDRUP describes a case of pelvic cellulitis in a man 50 years old. The first symptoms in this case were vomiting, flatulence, constipation, abdominal tenderness, and tympanites. There was some pain over the cæcum, and resistance on palpation and dulness on percussion at the same point. Examination *per rectum* showed a tolerably hard tumor situated in the left hypogastrium; it was easily felt by bimanual palpation. An aperient was given, with quinine and iodide of potassium, and wet compresses over the abdomen, for some days. The patient did not improve, the abdominal pain and distension became greater, the difficulty of passing flatus and fæces increased, and the patient was becoming more and more emaciated. An œsophageal tube was passed up to the sigmoid flexure, and a warm enema given, producing a scanty evacuation. The tube was bent by the tumor, which displaced the gut backwards. The enema was repeated two days later, resulting in the copious evacuation of foul-smelling fæces. The patient then began to improve, and after a few more injections fæces were passed naturally. At the end of a month there seemed to be but a slight infiltration anterior to the rectum. The tumor, while it existed, was of an irregular shape, and sometimes appeared to be firm, elastic and tender. In 1885 Dr. Muir, of Selkirk, published a case of pelvic cellulitis in the male.

CAUSE OF MILK SICKNESS.—The following, in an afternoon paper, comes from Vincennes, Ind.: W. T. Ratcliff, of Olney, Ill., has made a wonderful discovery of the plant that causes milk sickness. Some time ago Mr. Ratcliff, who lives eight miles south of Olney, was climbing over a fence and broke a weed, which came in contact with his hand. Mr. Ratcliff had at one time been afflicted with milk sickness. He noticed the broken weed had a peculiar smell, reminding him of his illness. It so impressed him that he resolved to test it. He took from his herd of cattle a young calf and fed the weed to it. The animal soon came down with the milk sickness and died. Mr. Ratcliff was not satisfied, and he fed the weed to two other healthy cattle from his stock, but the result was identically the same.

He took the weed to Olney and placed the matter before a doctor friend, who is now in conference with the Illinois State Board of Health. The discovery has created a good deal of interest, and a thorough test will be made by the State authorities.

SUDDEN DEATH AND ENLARGED THYMUS.—In a recent number of the *Deutsche Medicinische Wochenschrift* P. GRAWITZ, of Greifswald, records two cases of sudden death in infancy, one child being 8 and the other 6 months old. At the autopsies were found the usual signs of death by suffocation, with a very large thymus gland in each case. The question as to whether fatal dyspnoea might not be produced by pressure in such cases is one of considerable medico-legal importance. Virchow has a preparation of an enlarged thymus from a child that died of asthma, and he says: "The thymus was so enlarged that I do not see how anyone can deny that the dyspnoea may have arisen from its pressure."

QUACK DOCTORS' PAMPHLETS.—At the Liverpool City Police Court, on July 23, a man was sent to prison for fourteen days, with hard labor, for distributing in the streets objectionable pamphlets of a firm of quack doctors. Another man was fined 20 shillings and costs, or fourteen days, for posting bills of like character in urinals. Last week a Chicago Police Justice discharged a person arrested for the first offense, the prisoner claiming that he was ignorant of the law.

SCIENTIFIC CONGRESSES IN 1889.—In connection with the Exposition in Paris in 1889 there will be held International Congresses of Hydrology and Climatology, of Hygiene, of Dermatology and Syphilography, of Electricians, of Physiology, and of Therapeutics. The Committees on Organizations have been appointed, and it is probable that the names of the officers will be soon announced.

A NATURAL CUBIC CENTIMETRE MEASURE.—Says an exchange: "Every one has at his disposal a cavity, viz., the external auditory meatus, whose capacity is about a cubic centimetre." It is likely, however, that the use of this cavity for measuring drugs will not become popular.

THE INTERNATIONAL HYGIENIC SOCIETY has opened two kiosks for ladies in London. These will afford writing and reading rooms, and two

large swimming baths, surrounded by recreation grounds. It is proposed to establish fifty similar places in London for ladies (women?), about one hundred in the City for men, and swimming and shower baths in East London.

FRACTURE OF THE SCAPULA WITH LUXATION OF THE HUMERUS is very rare. Dr. Valnot, of Pargues, Aube, records a case, in the *Revue Générale de Clinique et de Thérapeutique*, of July 26, caused by a carriage wheel passing over the scapula.

PRINCE LOUIS FERDINAND, of Bavaria, has passed the State examination of the Empire, conferring upon him the right to practice medicine. He is the second member of his family to enter the profession.

THE RAILWAY COMPANIES OF ENGLAND have taken steps to have their employes examined for color blindness. Arrangements have also been made for examining persons of the mercantile marine.

A NEW JOURNAL, entitled "*La Médecine hypodermique, antiseptie médicale au moyen des injections sus-cutanées*," has appeared in Paris. It is edited by Dr. J. Roussel.

THE DISTOMUM HÆMATOBIUM, according to the *Deutsche Medicinische Wochenschrift*, has caused an epidemic disease among the Italian troops in Massaua.

THE ROYAL COMMISSION ON HIGHER MEDICAL EDUCATION, which has been sitting in England, will, it is thought, issue its report early in October.

THE MICROBE OF EPIDEMIC DYSENTERY, it seems, from a report made by Cornil, has been discovered by his pupils MM. Chantemesse and Vidal.

THE CONGRESS ON TUBERCULOSIS.—At this Congress, which met in Paris in the latter part of July, there were 400 members, about 70 being foreigners.

ISOLATED PAVILIONS FOR INFECTIOUS DISEASES are to be built in connection with the Hospital for Children's Diseases in Paris.

DR. LUDWIG JULIUS BUDGE, Professor of Anatomy and Physiology in the University of Greifswald, has recently died, aged 76.

PROFESSOR HUGO RUHLE, the well-known clinician of Bonn, died on July 11, aged 59.

PROFESSOR FRITSCH has declined to leave Breslau for Würzburg.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, June, 13, 1888.

C. B. NANCREDE, M.D., IN THE CHAIR.

DR. JOHN S. MILLER read the following paper:

A CONTRIBUTION TO THE STUDY OF BONE REPAIR.

The recent observations of Macewen¹ have done much to stimulate the study of bone repair, and have not thrown a little light upon the function of the medullary cells in osteogenesis.

The resort to mechanical irritation of the medullary tissues as a means of accelerating bone repair, is an old procedure. Nancrede² claims a priority in this for America. As far back as 1793, Eve³ relates that the lay surgeons of the frontier were wont to make multiple perforation of the external table of the skull where necrosis had followed the Indian mutilation of scalping. And twenty years ago Agnew⁴ resorted to the same procedure in a case of injury to the head. A fatal termination of the case, however, by encephalic complication, rendered the experiment incomplete. Reports of success by this procedure have been recently multiplied to an extent which will excuse us from repeating them in detail.

That furthermore, medullary proliferation is not only an element in osteogenesis, but is of itself sufficient to that end without periosteal coöperation, is evidenced by the case of Macewen¹, in which a considerable restoration of the humerus was secured "by bone transplantation," after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation is 1878.

The patient was a boy, two years or age. A suppurative periostitis of the right humerus of nine weeks' duration had resulted in total necrosis of the entire diaphysis, and this latter had been removed, leaving a tube of granulation material lining the periosteum. This tube had been kept patent by suitable dressing, until the whole space had become filled with granulation tissue, and had finally become a mass of cicatricial tissue. No bone had grown from this periosteum, except in a small part next the proximal epiphyses,

¹ *Annals of Surgery*, vol. vi, p. 289 et seq., 389 et seq.

² *Internat. Encycl. of Surg.*, by Ashurst, vol. v, p. 8.

³ *Remarkable Cases of Surgery*, p. 35. Philadelphia, 1857.

⁴ *Loc. cit.*, p. 301.

where at the outset the periosteum had been found covered with plaques of adherent osseous tissue. In the remainder there had been no osseous deposit, the result being a flail-like arm, which the patient found so useless that the parents desired its removal.

Macewen determined, however, upon another procedure. An incision was made into the upper third of the arm, exposing the head of the bone, to which was found attached a spike-like process of cartilage. This was removed, leaving as remains of the diaphysis a portion of bone $1\frac{3}{4}$ inch in length. From this point a sulcus about 2 inches in length was made in a downward direction between the muscles. The former presence of bone was nowhere indicated, and there was no vestige of periosteum, and the sole guide as to the correct position into which the transplant was placed was an anatomical one. Two wedges of bone were then removed from the tibia of a patient aged 6 years, with anterior curves. The face of the osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibia.

After removal they were cut into minute fragments with the chisel, quite irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, they having been taken from the interior of the bone.

They were then deposited into the muscular sulcus of the boy's arm, and the tissues drawn over them, and carefully adjusted. The wound healed without pus production. Two months after a portion of bone an inch in length and $\frac{3}{4}$ -inch in thickness was found firmly attached to the upper fragment of the humerus.

Two other wedges of bone, larger in size, were similarly dealt with, and inserted two months subsequently to the first graft, and a third couple were placed in position five months after the first. These filled up the gap in the arm to the extent of $4\frac{1}{4}$ inches. The arm then measured 6 inches in length.

Soon the utility of the arm was greatly restored. Seven years afterward he was seen and examined. The shaft of the humerus was found to have increased in length by $1\frac{3}{4}$ inches, being now $7\frac{3}{4}$, and it had increased in circumference to a marked extent, and assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. He could use the arm for many purposes, taking his food, adjusting his clothes, and many games.

Whether the introduction of proliferating medullary cells into ordinary connective tissue granulations may convert the whole into osseous tissue, or that a few osteoblasts will, so to speak, leaven

the whole mass, is a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede^a relates in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two-thirds of its extent. The process of repair had been delayed. He drilled numerous holes through the sequestrum into the medullary canal and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with the granulations of the soft parts, and in course of time the fragment was separated."

That the procedure in this case had the effect of stimulating osteogenesis from within we can readily believe; but concerning the fusion with granulation tissue without, a more accurate observation than is recorded by Nancrede is desired. Although by analogy we might conceive it possible, inasmuch as repair within the bone is by ossification of an embryonic tissue derived from the connective tissue around the blood-vessels of the medullary spaces. A similar case is reported by Macewen,⁴ in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, infers from this observation that "the periosteum covering a bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it and form a new periosteum."

These cases would seem to confirm Macewen's dictum that the periosteum has no part whatever in the regeneration of bone. But the first case I shall present to your notice this evening demands a different hypothesis for its explanation.

The patient, D. M., aged 14 years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came into my hands, had become from septic infection so desperate that I was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, I made with trephine and saw a fenestrum large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube. Demarcation was, however, promptly effected by the free use of aluminum acetate⁵

^aTransactions of the Philadelphia Academy of Surgery, 1883.
¹Loc. cit., p. 235.

⁵R. Pot. et alum. sulph., 1 part; plumb. subacet., 5 parts; aquæ bull., 100 parts. M. Filtra.

—that sheet-anchor in all sloughing wounds—and a fine layer of fine granulations became the field for any osteogenesis which we might hope to witness. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it was no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing, as well as to dilute the iodoform. As soon as the powder became saturated, it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. I mention these details because, without them, or similar ones, we can wait in vain for the desired repair. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts and, finally, the whole became covered with a new epithelium, which had gradually spread from the edges of the wound. The tissues now became denser, and offered more and more support to the body weight until, as you see, he has acquired a very useful limb, and can walk without discomfort.

We must, therefore, infer that a metamorphosis into bone has taken place, and as the original diaphysis was gone with its medullary structure, we can find no osteogenic agent in the result other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci :

The patient, a young man, developed an acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later Ceci⁸ extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone.

The only possible explanation of this result is by the hypothesis of periosteal agency or coöperation.

The second case which I present is in confirmation of Macewen's proposition that

"A portion of bone which has its continuity severed on all sides, and has had all its periosteum removed, is capable of living and growing."

This is in contradiction to our inference in the case of the tibia, and can be reconciled only by the assumption that the discovered laws of osteogenesis are of a lower order, subject to some general law of which we are as yet ignorant. But to the case.

Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior, for the relief of which all medical means had been exhausted in vain, and which, therefore, left to my option only the dernier ressort of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and excised. The button was, however, returned after having been sterilized in a 1 to 1000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated around its vertical axis that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case is, that before trephining I had carefully removed the periosteum, so that the latter can claim no part in the subsequent bone repair. After seven months there has been no return of the disease.

DR. JOHN B. ROBERTS : It is a curious fact that the medical mind has not appreciated the possibility of bone production, despite the frequent instances that must always have come under notice. I was taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it is the practice of the best surgeons to leave the spicules, and we find that often they do not die, and that they assist in the process of union and solidification. This experience is in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone can reunite, why not the button removed by trephining? Why is it not good practice to insert, when necessary, a portion of dog bone or chicken bone? as, indeed, has been done. We must not forget, however, the importance of asepsis, and that it is antiseptic surgery that has made these procedures possible.

In a case such as Dr. Miller reports to-night, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, I should be inclined to go still further, and turn it upside down. The bottom of the pit in which it is to be placed, and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing

⁸ Centralbl. f. Chirurgie, Dec. 17, 1887.

the reunion and return of pain which so often occur.

The case of tibial resection has been very interesting to me, as I have recently operated upon a similar one; the patient being, however, a woman of about fifty years, so that I cannot hope for as complete a closure of the cavity in the bone as in this growing child, exhibited by Dr. Miller. In that case I removed the whole front of the tibia, going as near the articular cartilages above and below as I dared. The process of repair is like that we see in a tree. We know that if a foreign body is inserted into a wound made in the trunk of a young tree, the process of cell growth will go on about it, and finally it will be completely covered in, and its presence be unsuspected, until, perhaps, the saw strikes it, as the tree is being converted into lumber.

Dr. Keen, in his recent case of trephining for brain tumor, returned the button of the skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we know what the dentists do in the way of transplantation of teeth, or return of teeth to their original sockets after removal of diseased portions. More remarkable still is the implanting of old, dried teeth into new sockets, bored in jaws from which even the alveolar process had disappeared, and their becoming fixed there.

DR. GEORGE E. STUBBS: In reflecting upon these cases, and similar ones, it occurs to me that perhaps in the numerous resections we have done in army and in civil practice, we have made mistakes. Surgery has advanced immensely since the war time, and antiseptic surgery has opened new possibilities. Often in my army practice we removed all the bone when there had been a comminution. I should now, with our new light, try to save more of the broken bone, and so shorten the period of recovery.

In regard to operative treatment of neuralgia, I believe that we are entering upon a stage of work that will be much enlarged in the near future. I had a case recently in which neuralgia of the inferior dental nerve had existed for nearly seven years. I removed one and three-fourths inches of bone with the dental engine, took out as much of the nerve as I had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there has been no return of pain; so that I consider I have obtained a very good result.

THE CHAIRMAN, DR. NANCREDE: The first question to be answered in a discussion of this kind is, What constitutes the periosteum? If we mean a fibrous membrane, the inner layer of which consists principally of yellow elastic tissue, then we must agree with Macewen's extreme views, and admit that it has nothing to do with bone repair. But if we study the normal process

of bone development, I, at least, must arrive at a different conclusion. The long bones are laid down in cartilage, a temporary structure. How do they ossify? By means of this very periosteum, which Macewen treats with such contempt, and which Ollier exalted too highly. There is a third layer of the periosteum in direct contact with the bone, and this layer is composed entirely of those elements which, wherever we see them, we recognize as the agents of ossifications—the osteoblasts. The temporary cartilage is invaded by connective tissue, ingrowths from the periosteum, covered with osteoblasts, and is eaten up by them; and we find it permeated, and finally replaced by a network of fibrous tissue covered with osteoblasts. A certain number always remain beneath the periosteum. A certain number, very small, remain in the Haversian canals, a still larger number in the medulla.

It is clear to me why compact tissue dies; it has so few osteogenetic cells. The medullary tissue lives because it is comparatively rich in osteogenetic elements. Why does bone die when the periosteum is stripped off? Because the resulting inflammation is so severe that the inflammatory tissue strangulated the osteoblasts in the Haversian canals. With antiseptic means we now control the inflammation, and the osteoblasts are not killed, and the bone is saved.

We are very hard, nowadays, on the periosteum. The fibrous layer has nothing to do with bone repair, but its osteoblastic layer is in direct communication through the lining of the Haversian canals with the medulla; it is practically one structure; and thus, if we look at this matter from the standpoint of a correct histology, we find that both views are correct, provided only that we have a distinct understanding of what is meant by the word periosteum in each case.

As to Dr. Miller's cases, I cannot agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone.

I would also take exception to Dr. Robert's proposition to scrape the button of bone and turn it inside out, in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw, is that it contains so little true medullary tissue, while, on the contrary, we can replace trephine buttons in the skull and have union, because the skull contains a large amount of such tissue.

I think Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone repair is that absence of suppuration afforded by antiseptic methods,

and under the conditions present in the operations he speaks of he did right. And, to-day, he does right in trying to save the bone. In each case he takes the proper course in relation to all the circumstances, and that is all anyone can do.

The case of Dr. Agnew, referred to in the paper, occurred some twenty odd years ago. I saw the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose was known to Potts, and to all the older as well as modern surgeons, and had not Ollier led us astray by grafting, by insisting upon the periosteum being the sole osteogenetic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla are torn off, I think we would have arrived at a correct practice sooner. But surgeons went wrong by authority of Ollier, as they are now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts refers to, the principle is probably the same in the bony pegs we used to employ for ununited fractures. They are hollowed out by the granulation tissue which develops into a fibrous or even osseous tissue, and so holds the tooth in place by these newly formed digitations.

About twelve years ago I exhibited to this Society a case in which I resected $4\frac{1}{2}$ inches of the humerus, and about $2\frac{1}{2}$ inches were reproduced from the sawn end. This was without antiseptis. In the case referred to by Dr. Miller, where I drilled the ulna, I am sure that the bone granulations fused with those of the soft parts for these reasons: the shell of bone when detached was not more than one-fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induces me to recommend that instead of wiring fragments of bone we nail them together; after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus save trouble and avoid damage in the removal.

DR. ROBERTS: Dr. Nancrede misunderstood me in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining of the lower jaw. I would scrape only what he calls the fibrous periosteum from the button, and from the bottom of the pit in the jaw I would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by sinking of the button, would be a solid bony plug, interposed between the nerve ends.

DR. MILLER: I do not see any advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve is still solid bone, and the groove does not matter at all. In

relation to the tibia case, the reason I emphasize the fact that the repair took place from the periosteum, is because there was entire death of the old bone with the involucrum, and the periosteum did not die.

Suffolk District Medical Society.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, May 9, 1888.

ALBERT N. BLODGETT, M. D., SECRETARY.

DR. C. P. PENGRA presented

A CASE OF ATHETOSIS.

Athetosis is the name of a disease that was first recognized and named by Dr. W. A. Hammond, of New York, in 1871. It is characterized by an inability to retain the fingers and toes in any position in which they are placed, and by continual motion.

Since his first paper in 1871, there have been thirty-eight cases reported from Europe and eight from the United States; and it is this rarity of its occurrence that has induced me to present this case to this Society, with the hope that it may aid in clearing up the obscurity that surrounds its etiology, pathology, treatment and claims as a definite disease.

In all of his writings Dr. W. A. Hammond claims that athetosis is a distinct disease, and, while admitting its analogy to chorea and cerebro-spinal sclerosis, does maintain that it is independent, and can be so diagnosed. In this he is supported by Greidenberg, in *Vratch*, who goes even farther, admitting that it is not necessarily a result of hemiplegia, but may even be idiopathic.

Opposed to this view are Putzel,¹ Sturges,² Leube,³ G. A. Hammond and Birdsall,⁴ and others.

In all cases reported, there has been noted, at some previous period, a history of epilepsy, chorea, hemiplegia, or other cerebral disturbance; while the case of Leube, after having had athetoid movements for four years, actually developed into, and continued as, ordinary severe chorea. The history of the present case is no exception to the rule; and, considering the lesions most often found in post-mortem examinations, it seems that we are forced to believe that athetosis is too intimately allied to chorea, hemichorea, and the like, to merit its claim of being distinct. The lesions found are in the corpus striatum, optic thalamus, or both, and the cortex cerebri, and are the same as occur in the allied troubles. My diagnosis de-

¹ *Op Functions Nervous Diseases.*

² *Lancet*, March 15, 1879.

³ *Deutsch Arch. für Klin. Med.*, p. 242, 1880.

⁴ *New York Academy of Medicine (Neurol)*, October 8, 1886.

pend upon the facts, that, in this case, the spasms are limited to the right hand only; that they are uniform, slow and quiet; that the muscles contract or extend together, and are firm and tense; that there is no trembling in any position of the hand or body; that the muscles of the arm are well developed; and that there is no scanning in speech. Hysteria is eliminated by the age at which it began and by the present condition of the patient.

Mrs. Anna B. Grover, age twenty-two, born in Marshalltown, Pa. Her family history is very good, excepting slight rheumatic attacks in the father's later life, and paralysis agitaus in one aunt.

Her own health has been exceptionally good, with the following exceptions received from her father:—

"Anna was healthy, and perfect as could be until about two and one-half years of age, when a servant girl caught her by the arm, and tried to pull her up stairs. A physician was called, and pronounced it a bad sprain. After the usual bandaging and carrying in a sling for two weeks, it seemed as well as ever. About three months afterwards, having eaten heartily of green Lima beans, pods, etc., in the garden, she was taken at night with violent spasms, purging and vomiting, followed by great prostration, emaciation, unconsciousness, and paralysis of said arm, and also of speech, that continued for three months. During the sickness she was almost continually in motion, even after getting up. Her voice was entirely gone, and the arm now affected was useless. Many different doctors and treatments were employed. The voice gradually returned, and the arm improved. At first the hand was strongly contracted and painful. The arm was carried behind her back, through shame, till about the thirteenth year, which produced a lateral curvature, for which a brace was worn eighteen months. All improvement has been from the shoulder towards the hand. Electricity seems to have done the most good."

Present Condition.—Her general health is of the best, since the foregoing. "The hand," as she calls it, is not at all painful: there is no movement at night, or unless her attention is called to it, or she is excited. A decided effort of the will has only the slightest effect upon its movements. At times it contracts powerfully enough to tear a glove: to open it, she must use her left hand, and forcibly extend the fingers to their utmost. When left alone, the contracted fingers will return to normal in from two to five minutes.

In most of the reported cases the movements have been most marked in the thumb and little finger. In her case the thumb and first finger are most affected. The first finger is often forcibly extended, while the others are as strongly contracted. The hand is of little use, as there is no

telling when it will take hold or let go. At present she is under no treatment, and is impressed that it is slowly improving.

In all cases the most improvement has been from electricity; and, contrary to theory, the faradic current has proved the more useful. No cure has been reported; and, while the trouble is regarded as incurable, it has never been known to prove fatal.

DR. J. J. PUTNAM asked: Are the reflexes of the lower extremity altered?

DR. PENGRA: Not at all. There seems to have been no trouble with any part of the body except the arm and the vocal organs. The lima beans were regarded as a poison by her parents, but from her history she undoubtedly had an attack of gastro-enteritis.

DR. PUTNAM: Are the muscles of the right arm hypertrophied?

DR. PENGRA: There is no enlargement that I know. The muscles seem stronger. They are set and tense.

DR. HAMILTON OSGOOD: What is the condition of the hand in the night?

DR. PENGRA: Quiet. She has never had a contraction in the night. There was a time, a considerable time ago, when she had slight contractions, I believe, but at no time has she had contractions since she has known anything about it.

DR. PUTNAM: I would like to say only a few words about the case; it is an interesting one. I suppose that it is very difficult, almost impossible, to draw any sharp dividing line between these disorders of movement. Dr. Gowers wrote, so far as I know, the most satisfactory paper on the subject a few years ago, and showed how one could trace gradual degrees of difference in these cases through the whole scales from the typical athetosis to even, he thought, as far as the late rigidity of hemiplegia; but without going so far as that, it seems very certain that there is only a sliding scale between the typical cases of athetosis and what has been known under the name of post-hemiplegic chorea; the difference consisting partly in the character of the movements, and partly in the fact of the greater or less amount of paralysis associated with them.

I was rather surprised to hear the Doctor say that so few cases have been reported, for I should not say that it is very rare to find cases that are as typical as this case. I would not speak of this as an absolutely typical case, because, as a rule, the movements would not stop in the typical cases when the patient was holding the arm at rest with the hand supported with the other hand, as at present; and then the movements are usually much more varied in character, involving extension quite as much as flexion, so that the fingers are thrown about in a worm-like action all the time, while here the flexion predominates, and

the flexor spasm is much more marked, I should say, than in typical cases of this disease. However, I do not see how it can come in any other category than that of one of the involuntary disorder of motion of that type.

DR. PENGRA: In regard to the number of cases I referred merely to the number of cases recorded. I have no doubt that there are plenty of cases, as we are quite aware, in most any line of disease, that, while not being recorded, have existed. We must realize that only in 1871 the disease was recognized as such. From the literature that I can read—of course my experience has not been sufficient to warrant my statement—but from what I can read I am inclined to think that athetosis is an organic disease. I think I so stated in my paper. The disease I do not think I stated as a typical one, from the peculiarity of the motion.

The definition that Hammond gives is "a disease characterized by an inability to control the fingers or toes, and a continual motion." And in his reports of the cases, and he is the father of the disease, you might say, as far as the diagnosis is concerned—in the reports of his own cases there has been such a marked remission that almost the first thing that I thought of in connection with the definition was the superfluousness of the word "continual." During the greater part of the time that my patient was suffering from the trouble, and the paralysis, which seemed to have been the precursor of the disease, she was in constant motion, that included a large portion of the body, I believe mostly on the right side, but the paralysis was limited to the right arm. The motions of the arm did include movements toward the back to such an extent that she finally put it on the back and left it there.

I do not think I referred to the case as being exactly typical; so far as I can see there is no typical athetosis.

My statement suggested as strongly as I could state from my knowledge of the cases, that it is an organic cerebral disease. The statement of Driedenberg (?) is the one statement that counteracts all others so far as it goes, to the effect that it may be idiopathic, but his own case does not sustain that, inasmuch as one of his cases were preceded by hydrocephalus and another case by epilepsy; and as to the matter of the word "continued," it is certainly not right, because there have been no cases recorded where remissions have not occurred.

DR. C. F. FOLSOM: It seems to me, Mr. Chairman, that it is a very interesting case, and that we want to understand in regard to a good many points what we cannot make out to-night before calling it clearly a case of athetosis. If it is athetosis it differs in a great many essential respects from what is called typical athetosis. It is a question, of course, how far these movements of

this sort can be considered as belonging to that group, and due to organic trouble. There doesn't seem to me any marked hypertrophy of the hand, and the movements seem very different from the movements of athetosis; the flexor muscles contract almost instantly, as soon as the resistance is taken away. It is quite possible that there may be a little difference in the knee-jerks. The whole group of cases is certainly a very interesting one. I suppose that nobody is satisfied in his own mind just what to call athetosis, and what not, but the fact of the hand being quiet during sleep, and perfectly quiet so long in the position that the patient has it now, seems to me to make it very unlike what is described as athetosis.

DR. PENGRA: Would the Doctor suggest some name for it?

DR. FOLSOM: As I say, I would not wish to express an opinion without having it under observation some time. It reminds me of a case that was in Dr. George B. Shattuck's ward in the City Hospital, which suggested athetosis. Strangely enough a case of real athetosis was in the ward at the same time. The former had these features of being quiescent during sleep with no hypertrophy of the muscles, and the contractions of the muscles were sudden and violent and quick, instead of slow and gradual, and there was the feature of quietude for a long time. It was finally thought to be a functional trouble, and in the course of time, by rest, and cod-liver oil and tonic treatment, it almost entirely disappeared. It seems to me it is a difficult matter, sometimes, to make a diagnosis between the various forms of anomalous chorea and hysteria and athetosis.

DR. PENGRA: I would say that according to the best authorities that I can find on the subject of diagnosis—that is, in print—this is the essential feature, which I quote from Dreidenburg, "that there is no trembling in any position of the hand or body; that the muscles of the arm are well developed, and there is no scanning in speech; that the movements are uniform and slow and quiet; that the muscles contract and extend together, and are firm and tense."

DR. FOLSOM: He evidently has in mind, I think, disseminated sclerosis, in his diagnosis; in regard to the scanning of speech, etc.

DR. PENGRA: I don't pretend to be an authority on the subject at all. I brought it before the Society to hear some opinions beside my own. Experience, of course, would be a teacher that a young man could not get from books. In regard to the treatment of the true athetosis, there was one writer, in fact this same Dreidenburg, who stretched the medium nerve, but he finally had one case where he stretched the nerve and the nerve remained stretched, and as in no previous case he got any result that lasted more than eight days, he finally gave that up, and resorted to electricity entirely.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Surgical Aid in the Treatment of Pulmonary Disease—Surgery in Laryngeal Phthisis—Surgery in Pneumonia; in Pulmonary Abscess; in Tubercular Cavities; in Pulmonary Tuberculosis.

The discussion on *Surgical Aid in the Treatment of Pulmonary Disease* at the June meeting of the Fifth District Branch of the New York State Medical Association was opened by a suggestive paper from Dr. N. L. North, consulting surgeon to the Methodist Episcopal Hospital of Brooklyn. At the outset he said that he was aware that comparatively few clinical facts could be produced upon which to base an argument, and such a discussion must, of necessity, be somewhat speculative. It was as yet a matter only in contemplation, though perhaps an event to come, for the surgeon to have the temerity to amputate a tuberculous larynx, or to make a door in the chest cavity and, having rid a lung of its tuberculous or diseased portion, obtain by careful antiseptic or aseptic dressing union of the remaining parts, and subsequently transfer the patient to the physician for medical upbuilding and convalescence. It was a fact, however, that notwithstanding the better knowledge of the pathological conditions and hygienic needs in diseases of the lungs, the treatment pursued was altogether unsettled and unsatisfactory, and without marked results. Phthisis attacked its multitudes now, as in the ages past, and multitudes succumbed to it in spite of medicine, hygiene, change of climate, and a largely increasing list of new remedies; and even the acute affections of the organs of the chest proved fatal at the present time in nearly, if not quite, as large a percentage as formerly. At this juncture, with the thought of what surgery—modern, antiseptic surgery—has accomplished in other parts of the body in alleviating and curing diseases and injuries heretofore thought to be fatal, and only fatal, in their tendencies and results, it seemed reasonable to turn our attention to the subject of surgical aid in chest diseases.

The first affection considered was pneumonia, and in this he expressed the opinion that it would be wise in many cases to return to the old minor operation of phlebotomy. "In the first, or congestive stage," he asked, "when the lung is literally blocked up and the right side of the heart filled to overflowing with blood, is it not more rational to abstract the blood by venesection, if need be, or even by direct aspiration from the right ventricle, and so relieve the obstructed lung and the engorged heart, than to attempt to force the organs to accomplish an impossibility by the stimulating plan so common in what is now called the

supporting treatment? The fear of producing prostration by prompt radical treatment, as well in this disease as in some others, sometimes promotes, through improper attempts at stimulation, the very engorgement and consequent prostration it is desired to avoid."

It is perhaps worthy of note that quite a number of the speakers who took part in the subsequent discussion also spoke with favor of a return to the practice of venesection in many cases in the first stage of pneumonia.

Again, in pneumonia, he went on to say, the patient having passed the dangerous point of engorgement, and the changes of the second and third stages tending to resolution having failed to occur, so that a condition of suppuration and breaking down of the lung, or perhaps gangrene, has supervened, it would seem eminently proper that surgery should be called in to assist in the treatment, and an attempt, at least, be made to arrest the almost certain progress of the disease to a fatal termination. To make an opening through the chest wall with the view of draining the pus cavities or boldly removing, if need be, the diseased or gangrenous portions of the lung itself, would, with proper precautions, antiseptic and otherwise, appear possible, and to afford a reasonable prospect of good results. Chronic abscess, he continued, had already been relieved by surgical procedure, and the question remaining for decision in regard to this was how best to supply the relief, whether by resection of one or more ribs and a large, free opening, or by a valvular outlet. It had occurred to him that with a device containing a ball-valve the passage of fluid might be made comparatively free, while the passage of air inwards could be practically prevented.

Laryngeal phthisis offered to the surgeon opportunities for testing the resources of his art with fair hope of favorable results, since operative procedures for the arrest and, in some cases, apparently permanent cure of epitheliomatous, carcinomatous, and other malignant diseases of the larynx had already been reported. The probabilities would encourage a resort to either partial or entire laryngectomy, and especially in view of the fact that laryngeal tuberculosis not infrequently proceeded almost to its fatal termination without the lungs having been invaded by the disease.

Having made some general remarks to the effect that surgical wounds of the lungs and pleuræ were less dangerous than was generally supposed, Dr. North made the somewhat startling suggestion of completely removing the apex of a tuberculous lung at an early period, before the disease had spread to other portions of the lung or involved the opposite lung or other organs. This idea, he said, was one which had occupied his mind considerably of late, and was in line with the recent practice of removing tuberculous glands, joints,

etc. The details of an operation to reach and remove a lung apex would be slightly different in the two sides on account of the difference in the origin and course of the right and left subclavian artery. Such an operation would be almost identical in its general features with that for ligating the subclavian, except that after the vessel was reached it, with the accompanying rim and veins, would be lifted back with a blunt hook. After the application of suitable clamps, to prevent hæmorrhage or the egress or ingress of air, would follow the ablation, with the knife or scissors, of the diseased portion of the lung. The lung and pleural wound would then be closed with the continuous catgut suture, and the whole allowed to drop back into the chest cavity; after which, with the utmost care as to drainage, etc., the external incision would be closed. Very possibly in some cases the clavicle would have to be sawn in two and turned back; while in others the first rib might have to be exsected in order to secure sufficient room for reaching and manipulating the lung apex. Perhaps in other cases, again, a posterior operation, involving the exsection of the first and second ribs posteriorly and the pushing aside and downward of the scapula, might prove the most feasible method. In either case the object of the radical procedure referred to would be the cure of the disease, or the prevention of general tuberculosis by an early removal of the nidus of the tubercle bacilli.

In concluding Dr. North propounded a number of questions which were taken up *seriatim* by Dr. Joseph D. Bryant, who read the next paper.

(1.) *Can surgery be made available in the treatment of pneumonia or other acute affections of the lungs, and if so, how?* The foundation of rational medicine and surgery, Dr. Bryant said, rested on the detection and removal of the causes of disease. Hence, before inquiring what surgery can do for the relief of these conditions, it seemed proper to inquire first how surgical skill could prevent them. The exact nature of acute pneumonia, whether it were a local disease or a local ramification of a constitutional disease, was not as yet determined. Surgery could not, therefore, exercise a rational preventive influence against this disease; nor could he comprehend how operative surgery could exercise a practical influence in relieving a patient from the full effects of an attack of it. As to traumatic pneumonia, he did not feel that he could add anything to what had already been published in the various standard works on surgery.

(2.) *Can surgery assist in the treatment of abscess of the lung; and what is the safest and most effectual mode of reaching, evacuating and draining the abscess?* In abscess of the lung surgery could and did afford efficient assistance, and Hippocrates himself had laid down the surgical principles of treatment in a clear and satisfactory manner. The greater part of Dr. Bryant's paper was taken up

with an admirable description of the methods now in vogue among the best surgeons for the diagnosis and treatment of this class of affections, and at its conclusion he stated that Professor Roswell Parker, of Chicago, had reported 40 cases in which pneumotomy was performed for the relief of bronchiectatic and tuberculous abscess, with the following results: 23 bronchiectatic abscesses, with 9 deaths; 13 tuberculous abscesses, with 6 deaths. In 32 cases of hydatid cyst treated in a similar manner there were 4 deaths.

(3.) *What surgical process, if any, can help in the treatment of laryngeal phthisis?* In an advanced stage of the disease obstructed breathing and expectoration not infrequently occurred; and he said he had in mind a case of this kind at Bellevue Hospital which Professor Janeway transferred to his care for relief from these symptoms by tracheotomy. The operation not only relieved the patient of obstructed breathing, but also at once afforded a free escape through the tube of purulent matter from the lungs. In this case the upper extremity of the trachea was nearly occluded by ulcerating granular growths, and it appeared that he would have rendered the patient a more complete and lasting service than was possible by tracheotomy by splitting the larynx in the median line anteriorly and removing the diseased contents. A step of this kind could not, however, be taken consistently except the prognosis were bad in all respects. The surgical measures that were now employed in other conditions of phthisical larynx belonged more properly to the domain of specialists in laryngology.

(4.) *Can surgery be made effectual in draining tubercular cavities, and how?* Such cavities could be opened in a manner similar to that described for abscess of the lung, and the precautions enjoined in the latter instance should be sedulously observed. It was undoubtedly true that the disinfection and drainage of tubercular cavities would in many instances cause a marked alleviation of the symptoms; but it was hardly to be expected that a cure of the local tuberculous condition could be effected, since the specific growths are too far disseminated from the abscess wall, and often made up such a large proportion of its structure that little, if any, direct curative influence could be exerted. A tuberculous ulcer of the integument—one that could be treated directly and with vigor—exhibited a degree of perverseness to the effect of both medical and surgical measures that portended ill for the successful treatment of a similar disease of the pulmonary tissue.

(5.) *Is it possible by surgical process to reach and destroy, by antiseptics, germicides, or otherwise, the bacillus tuberculosis, or whatever is the cause of phthisis pulmonalis?* This question, he said, had already been answered under the fourth. The injection into pulmonary tissue and pulmonary cavities of substances destructive of the tubercle

bacillus could be indulged in if one felt inclined to make the attempt; but to consider it possible to cure in any appreciable degree the tuberculous condition itself by any such measure, seemed to require a large increase of faith, with a corresponding loss of judgment. He did not think it proven to the satisfaction of competent physicians that the injection of antiseptic fluids into tubercular lung cavities has been productive of practical good; while the dangers attendant on the general acceptance of such a measure would undoubtedly constitute a great evil.

Dr. Avery Segur, of Brooklyn, referred to the results obtained in cases of bronchiectasis by Dr. Theodore Williams and Mr. R. J. Goodlee, of London, and quoted the conclusions arrived at by the latter in regard to the surgery of the lungs. He also stated that Dr. Williams had for a considerable time been employing antiseptic injections at the Brompton Hospital for consumptives, and that the results obtained by him, as well as other observers, both in England and this country, had been such as to encourage further trial of the method in suitable cases. The injection of pulmonary cavities was found to be perfectly possible, and attended with great amelioration of the symptoms in many instances.

Dr. Bailey, of Brooklyn, spoke of the benefit which he had seen derived from such injections in five old hospital cases of phthisis; there being diminution of the cough, expectoration and night-sweats. Half a drachm of a five per cent. solution of carbolic acid in glycerine was injected every day, or every second day, and the procedure was entirely painless.

Dr. C. S. Wood, of New York, gave a *résumé* of the results obtained by Goodlee, Runeburg, and other investigators in this field, and having referred to the plan proposed by N. Riva, an Italian surgeon, for treating tuberculosis by injecting antiseptic fluids into the pleural cavity and completely flooding the diseased lung, stated that in summing up the observations and reports thus far made we might safely draw the following conclusions: In abscess of the lung, whether gangrenous or not, it is advisable to first aspirate the cavity, and then inject, at the same time and through the same puncture, an antiseptic fluid. If the abscess refills the operation must be repeated. When a foreign body is supposed to be lodged in a bronchus an opening should be made into the lung by the resection of a portion of one or more ribs, under strictly antiseptic precautions, and the foreign body removed. That the latter operation was attended with but little danger Dr. Wood said was abundantly demonstrated by the results of many similar operations during the late war. But with our present knowledge there was but little encouragement in any surgical operations upon the lungs for phthisis; and the reason why surgery was so impotent in this field was not

difficult of comprehension. Tubercles were not confined to any one portion of the lung, although the aggregation was usually greater at the apex than elsewhere; and before a cavity requiring surgical treatment had been formed, other portions of the lung, as well as other organs, were usually involved.

Drs. Leale, Truax, Barnes, McCullom and Squibb also took part in the discussion, and in bringing it to a close Dr. North spoke of the probable local character of tubercular disease in the early stage, just as in the case of cancer. He thought that we need not feel discouraged because the reports of the surgical procedures referred to were not as yet very favorable. If there was any hope of success whatever, we must still persevere, as the alternative was death. The phthisical patient should not be abandoned to the surgeon; but the surgeon and physician should unite together in the treatment.

P. B. P.

BOOK REVIEWS.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D., L.R.C.P., etc. American Edition issued under the supervision of the author, and containing all the material of the two-volume English edition with some additions and revisions, with 341 illustrations. 8vo, pp. 1,357. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

Dr. Gowers' numerous contributions to medical literature and his former smaller works upon the diagnosis of diseases of the nervous system, have made him well known to the profession as a clear and exact as well as an interesting writer. From the present volume we expected much and have been in no way disappointed. It is probably the most comprehensive manual upon the subject in our language. Each topic is discussed with well-proportioned fullness. The descriptions are clear and accurate and not at all diffuse.

The author says in his preface that the object of the work is "to afford the student the means of gaining an adequate conception of our present knowledge of the diseases of the nervous system, and to supply the practitioner with the information he needs for dealing with these diseases in his daily work." The book will accomplish these objects better than any other at our hand. The clearness of Dr. Gowers' descriptions of symptoms of diagnostic value is particularly commendable.

A reader is surprised, however, at the rare references that are made to authors and experimenters. While this is disadvantageous to those who make nervous diseases a specialty and are endeavor-

oring to cover the whole literature of the subject in their reading, it tends rather to gratify the student and fix definitely ideas in his mind by teaching him *ex cathedra*.

The illustrations are numerous and for the most part very satisfactory. A few that are evidently made directly from photographs of patients are artistically poor, and some of them do not make clearly evident the object to be illustrated. It is to be hoped that in future editions these cuts will be replaced by better ones.

The first sixty pages are devoted to general symptomatology. In the next sixty pages diseases of the nerves are described. Following this subject 325 pages are devoted to diseases of the spinal cord. The next 500 pages are allotted to diseases of the brain, and the remainder of the work to general and functional diseases.

MISCELLANEOUS.

AMERICAN ORTHOPEDIC ASSOCIATION.—*Preliminary Programme of the Meeting to be held in Washington, September 18th, 19th and 20th, 1888.*

1. Newton M. Shaffer, New York, "The Modern Treatment of Chronic Joint and Spinal Disease."

2. V. P. Gibney, New York, "Immobilization in Articular Disease." Report on the Treatment of Club-foot by means of the Thomas wrench, or the "T. T."

3. Henry L. Taylor, New York, "Mechanical Treatment of Senile Coxitis."

4. A. B. Judson, New York, "A Practical Point in the Treatment of Potts' Disease of the Spine."

5. C. F. Stillman, New York, "An Efficient and Inexpensive Method for the Mechanical Treatment of Potts' Disease."

6. John Ridlon, New York, "Rest, in the Treatment of Chronic Joint Diseases."

7. Dillon Brown, New York, "Acute Epiphysitis in Infants."

8. Samuel Ketch, New York, "Remarks on Lateral Curvature and its Early Treatment."

9. DeForrest Willard, Philadelphia, "Osteotomy for Anterior Tibial Curves."

10. T. G. Morton, Philadelphia, "Description of an Apparatus for Measuring any Inequality in the Lower Extremity."

11. Benj. Lee, Philadelphia, "Hæmatoma Oris, as a Sign of Injury to the Spine in the Superior Cervical Region."

12. A. J. Steele, St. Louis, Mo., "Two Knee-joint Excisions."

13. H. Hogden, St. Louis, Mo., "Report on Morton's Operation for the Immediate Reduction of Club-foot."

14. Ap. Morgan Vance, Louisville, Ky., "Femoral Osteotomy."

15. Geo. W. Ryan, Cincinnati, Ohio, "A Case of Reflex (?) Valgus."

16. W. R. Whitehead, Denver, Colo., "Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries; with especial reference to the Hip, Knee and Elbow Joints, with Illustrative Cases."

17. E. H. Bradford, Boston, Mass., "Analysis of Treatment of Seventy Cases of Club-foot."

LEWIS HALL SAYRE, Sec'y.

285 Fifth Avenue, New York.

SIMPLE TESTS FOR POISONOUS CANDIES.—The *American Analyst*, of March 15, 1888, writes that to test candy with respect to poisonous colors one needs a few ounces

of alcohol, about an ounce of bleaching powder in solution (hypochloride of calcium), a little white woollen yarn, and a small bottle of aqua ammonia. See first whether the color can be dissolved out by alcohol; if it can, immerse the woollen yarn in the solution, and should the color adhere to the yarn and dye it, the probabilities are that it is a coal-tar color; if a red, it may contain arsenic. If the alcohol produces no effect, apply a drop of the bleaching powder solution to the surface of the sweetmeat; if the color fades out it is probably of vegetable origin and harmless.

"The poisonous color most frequently used is chrome yellow, a compound of chromium and lead. Its presence may be strongly suspected if the following tests have shown that none of the harmless yellows have been employed. The harmless yellows most commonly employed are turmeric, a vegetable color made from the root of a certain herb, flourscein, a coal-tar yellow, and a number of vegetable yellows. Turmeric turns red when treated with ammonia. The other vegetable yellows fade when treated with the solution of bleaching powder. To detect flourscein dissolve the candy in a tumbler of water and view the water in the sunlight against a black background. If flourscein has been used, the green flourscein will then be seen. When the tumbler is held between the eye and the light the color of the water appears yellow. If no results are obtained by any of these tests the suspected candy is probably colored by chrome yellow and is poisonous. Burnt umber, an iron-bearing earth frequently used to adulterate chocolate confections, may be detected in this way: Dissolve the confection in a glass of hot water; if a brown gritty residue remains undissolved on the bottom the presence of the umber is indicated."

WATER FOR LIVERPOOL.—Note is made of a stupendous plan for supplying the city of Liverpool with water, says the *Sanitary News*. It involves the removal of a whole Welsh village, including woods, cottages, churches, etc., this immense space to be devoted to a reservoir four and one-half miles long by half a mile to a mile broad, and eighty feet deep. There are to be three lines of pipe, each sixty-eight miles long, with filtering beds and secondary reservoirs; and the cost of the aqueduct alone is estimated at \$15,000,000.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 11, 1888, to August 17, 1888.

Major J. N. Lauderdale, Surgeon U. S. A., July 28, promoted to Surgeon U. S. Army, with rank of Major, to rank from July 3, 1888.

Asst. Surgeon Joseph K. Corson, U. S. Army, leave of absence extended one month. Par. 17, S. O. 178, A. G. O., August 2, 1888.

Asst. Surgeon James C. Merrill, U. S. Army, granted one month's leave of absence from August 3. Par. 7, S. O. 178, A. G. O., August 2, 1888.

Asst. Surgeon John de B. W. Gardiner, U. S. Army, will on the expiration of his present sick leave of absence report in person to the commanding officer at Ft. Leavenworth, Kan., for duty. Par. 4, S. O. 178, A. G. O., August 2, 1888.

First Lieut. Charles F. Mason, Asst. Surgeon U. S. A., re-appointed July 28, 1888, to rank from July 2, 1888. Reported for duty at Ft. Washakie, Wyo., August 2, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 11, 1888.

P. A. Surgeon H. W. Whitaker, detached from the "Mohican" and wait orders.

INFORMATION WANTED.

A correspondent wishes to get a work giving the treatment of genito-urinary diseases by electricity.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 25, 1888.

No. 8.

AN ADDRESS

ON

THE PRINCIPLES OF PRACTICE INVOLVED IN THE EXTIRPATION OF THE UTERINE APPENDAGES WHEN NOT THE SEAT OF TUMOR.

Delivered by invitation before the Medical and Surgical Society of Western Illinois, at Jolietville, Ill., August 1, 1888

BY CHARLES A. L. REED, M.D.,

OF CINCINNATI

PROFESSOR OF SURGICAL DISEASES OF WOMEN IN THE CINCINNATI COLLEGE OF MEDICINE AND SURGERY, AND OF CLINICAL GYNECOLOGY AT THE WOMAN'S MEDICAL COLLEGE OF CINCINNATI

MR. PRESIDENT AND GENTLEMEN:—In accepting your kind invitation to address you—an honor for which I am profoundly thankful—I find myself embarrassed at once by a wealth of topics and by a poverty of ability. I take it, however, that I will come nearer engaging your attention and fulfilling your expectations by discussing some subject connected with the department of practice with which I am identified. But even within that limitation I have left me a multitude of themes; for the progressive spirit of gynecology and abdominal surgery has brought to the surface many perplexing problems of importance alike to the specialist and to the general practitioner. I may be pardoned for the reflection that in many of these questions, involving considerations of operative procedure, and in which the success of the operation depends upon its timely performance, the burden of responsibility rests with the general practitioner. It is he who first sees the case; it is he who should first recognize, or at least suspect, its pathology; and it is he who should first at least suggest the necessary treatment. The future success of abdominal surgery, in its broader extensions, in this country, depends upon the recognition and adoption of this rule by physicians who are the first to attend these cases.

The improved statistics in ovariectomy now being furnished by the leading American operators is due chiefly to this phase of progress by the general profession. A distinguished English ovariectomist was once showing me a case of small and easily movable ovarian cyst. "That," said he, "is the way we get our patients since we edu-

cated the profession up to early operations and no tappings." In this regard our own profession is nearly as far advanced as the British. In the last five years I have not operated upon a single case of ovarian tumor that had been previously tapped, and the majority of my cases have been advised to have the operation done early. This is because our profession has grasped the principles upon which success in ovariectomy depends; and it is safe to say that it will act with similar promptness and wisdom in advising laparotomy for other conditions just so soon as the expediency of the operation and the principles upon which it is based are demonstrated with equal conclusiveness. I find myself, therefore, readily prompted to discuss to-day, in a very brief way, a no less important theme than the principles of practice involved in the extirpation of the uterine appendages when not the seat of tumor. I am not unmindful that I may be venturing in where angels might fear to tread. In abdominal surgery the accepted truth of to-day bids fair to become the demonstrated error of to-morrow. This was recently demonstrated by my distinguished friend, Grieg Smith, who found it necessary to practically rewrite his already classical work on abdominal surgery within six months after it had been out of print, so great had been the progress in so short a time. You will therefore pardon me if, at the outset, I declare that I do not to-day commit myself to any final conclusions on the questions which I may discuss.

At the outset let me emphasize a few preliminary points. The uterine appendages—ovaries, parovarium and tubes—are in no sense vital organs. Their presence is not essential to either the life or the physical well-being of a woman. Indeed, her whole sexual apparatus appears to be tucked away in one corner of her body so as to be of the least inconvenience after having fulfilled the temporary purposes for which it was created. But even in this remote position, and whether in a state of functional activity or not, these organs sustain certain relations which make them objects of at least pathological importance; and hence it is well enough to bear these relations in mind. The proximity of the appendages to the remaining pelvic viscera and to the intestines is of less importance than the blood and nerve supply. It

is therefore well enough to remember that the appendages get their blood from the ovarian arteries and from a few anastomosing branches of the uterine; that they get rid of their blood chiefly through the Pampiniform plexus; and finally, that both arteries and veins are situated low down in the posterior fold of the broad ligaments. The significance of this arrangement is peculiar, viz.: that, while displacement of these organs disturbs, their removal does not destroy, the circulation. It is also well enough to remember that the nerve supply comes from the hypogastric plexuses of the sympathetic system, and that these plexuses, in turn, are supplied with communicating branches to the lumbar and sacral ganglia and to the sacral nerves. The significance of this arrangement is that, although primarily supplied by sympathetic filaments, yet, by virtue of secondary connections with the spinal system, the appendages become central telegraphic stations whence impressions, pleasurable or painful, healthy or unhealthy, are transmitted to the remotest nook and cranny of the system. It should be remembered, too, that the function of the ovary cannot be exercised if the matrix of that organ be so hardened that the maturing follicle cannot approach the surface, nor when the white tunic becomes so toughened from disease that the egg, having reached the surface, cannot escape. And it should be remembered, finally, that the Fallopian tubes, to be of any account at all as egg-carriers, must be open at both ends. It is in these facts that extirpation of the appendages finds its chief justification, but we can spend a few minutes in further considering

TAIT'S OPERATION.

About 1868 Sir James Y. Simpson was treating all cases of retro-uterine displacement by reposition and pessaries, and he was treating all cases of retro-uterine tumefaction in which the mass could not be demonstrated as distinct from the uterus as cases of uterine displacement. The results were not satisfactory, particularly to a young assistant, who once ventured the suggestion that the retro-uterine mass might be a distended Fallopian tube (which had just been discussed in France), and that it might be removable. The idea was frowned upon by the autocrat of the Royal Infirmary. In a short time the young man sought a new field of labor south of the Tweed, and carried his idea with him. On February 11, 1872, at Birmingham, Mr. Lawson Tait—for Simpson's assistant was no other than he—successfully opened a woman's abdomen and removed her uterine appendages. This was the beginning of the operation of extirpation of the uterine appendages for inflammatory disease, and the beginning of an intelligent pathology of what Sir Spencer Wells calls "these out of the way organs." The successive revelations of pathology

which have ensued upon this bold and daring step are of vast importance. We now know that so soon as the Fallopian tube becomes inflamed its fimbriæ curl inward and become sealed by plastic lymph; that the ordinary mucous secretion, finding no adequate vent through the normally narrow uterine orifice of the tube, accumulates; that if the exudation be intense or of gonorrhœal origin it becomes purulent; that if less intense and non-specific it remains merely mucous; that if it occur at or about the moliminal period it may be sanguineous; and finally, that if in consequence of progressive suppuration there is spontaneous discharge of the contents into the uterus the collapsed walls, now denuded of their epithelium, may become adherent. In this way we have (a) pyosalpinx, (b) hydrosalpinx, (c) hæmatosalpinx, and (d) desquamative endosalpingitis with adhesions.

And just here permit me to call attention to a point which I deem of great importance, and that is that the one condition common to all these various forms of disease is occlusion. I know no better way to emphasize this fact than by calling your attention to the specimens which I herewith exhibit to you, and which I took at random from my collection. They are the tubes and ovaries which I removed from a young lady who had been under every form of conservative treatment for over two years. You will observe that the tubes are tightly closed and that they are distended by pus. The plastic exudation around the fimbriated extremities is extensive and well organized and, as you observe, has fairly soldered each tube to its respective ovary. You conclude at once that, first, an ovule could not get into the tubes; next, that if it could get in it would be killed by the highly acid purulent contents; and finally, that if it could get in and could survive the pus, it could not get out. It is evident that tubes in such a fix can subserve no other than pathological purposes; that, indeed, in a functional sense they are dead, and dead, too, beyond the hope or possibility of resurrection.

The latter declaration may be, indeed has been challenged. While in Philadelphia a few years ago, Professor Parvin told me that during his residence in Indianapolis he had heard of a doctor living somewhere in Indiana who thought he had an idea that he could run a sound through the womb into the tubes, drain away their contents and thus cure them. We both laughed at the vagary, and so far as I was concerned the mad proposition was forgotten until I encountered it again in the *Medical Register* some time last winter. It was from the pen of a Kansas City man that time; but I have heard nothing from him since I showed him the error of his way. In the *British Medical Journal* for April 21 of this year, I was surprised to find Dr. More Madden, of Dublin, commit himself to the same fallacy, quoting

this very Indiana method of treatment as something new with himself. It was heralded as his discovery. Now, the discovery of gravitation by Newton was an accident; the discovery of the expansive power of steam by Watt was an accident; and hence it was eminently proper that Madden's discovery also should have its birth in an accident. We learn, therefore, that while exploring the uterus he was surprised "to find the sound pass in up to the handle, and on palpation to discover that it had obviously entered the right Fallopian tube." The isolated circumstance was forthwith elaborated into a new tenet of conservative (?) surgery—as practiced by Madden. Now, as a matter of history, even my Indiana neighbor was anticipated in his idea by Tyler Smith, who may be pardoned for having entertained the thought when we consider the defective knowledge of pathology and surgery in his day; but even he re-deemed himself by repudiating his wild fancy. It is difficult to treat the matter seriously in this day of advanced intelligence.

The objections to the proposed practice are simply insuperable. In the first place, none can tell whether he has pus or something else within the tube; while, in the next, no refinement of manual dexterity will enable one to determine whether he is putting the sound into the tube or through its attenuated walls into the peritoneum. The danger is obvious. But should the tube be successfully drained in this way, it is of no account anyhow, for the distal extremity remains closed. Here we pause. We must wait until some mechanism is devised with which to disentangle the fimbriæ. We turn with confidence to the ingenuity of Madden. We shall have no surprise when we see him emerging from his seclusion with some beautiful device—combining, may be, the principles of the glove stretcher and the knitting machine.

BATTEY'S OPERATION.

On the 17th day of August, 1872, Dr. Robert Battey, of Rome, Ga., successfully extirpated the normal ovaries from a woman for the arrest of the menstrual function. The case, which was reported in the *Atlanta Med. and Surg. Journal* for September, 1872, was the first recorded one for extirpation of any part of the uterine appendages for any purpose whatever. The technique of the operator was similar to that which had formerly been practiced by Thomas for the removal of small ovarian tumors through the vagina, and which he had described under the head of "vaginal ovariectomy." Battey's idea was to "arrest diseased and pernicious ovulation and to effect the change of life." It was based upon the then accepted but now fairly exploded doctrine that menstruation is necessarily dependent upon ovulation; hence the ovaries alone were removed. The operation as practiced by Battey several years after its

inauguration, consisted in opening the vagina through the cul-de-sac; the ovaries were dragged down by the fingers, separated by *écrasement*; no ligature was applied, no drainage-tube was inserted, and the wound was left open. Blood clots which subsequently formed were raked out by the finger, and when suppuration began, as it frequently did, the peritoneum was washed out by means of a gum catheter. Three to five assistants were required, the time was generally an hour or more, and the mortality was 20 per cent. This operation is, fortunately, a thing of the past, a chapter of history. The procedure which now goes by the name of "Battey's operation" is, strictly speaking, nothing more or less than an abdominal section for the removal of the healthy ovaries alone, undertaken for the purpose of precipitating the menopause.

There are three reasons why this operation is now but seldom done, viz.: first, the removal of the ovaries alone is no guarantee of the cessation of menstruation; second, the tubes, even when healthy, can be of no value and are only potential for mischief when left behind; and third, the tubes can be removed with the ovaries without complicating the operation. The fact remains, however, that the ovaries, whether diseased or not, may be removed under certain conditions and the healthy tubes left behind, a mere question of remote possibilities alone being involved. The field, however, is limited.

The operation may be done with propriety in cases of rudimentary uterus, giving rise to distressing menstruation—circumstances which first induced Battey to do the operation. I have on hand a case of extrophy of the bladder and congenital absence of the vagina; menstruation has occurred from the rectum. I can detect ovaries by rectal examination. I shall remove the ovaries and of course the tubes, too, if I can find them, as soon as cool weather arrives. There are cases of obscure pelvic pain which depend upon chronic ovaritis. In these cases we may have interstitial induration or peripheral exudation with adhesions. The matured Graafian follicles, being unable to burst, undergo cystic degeneration. Either of these three conditions is the source of exquisite pain, constant, but aggravated at the menstrual period, and interfering to an important degree with the general health. Often these diseased organs become the nidus of more active inflammatory trouble which in turn may result in abscess. One of my fatal cases presented precisely this state of affairs. It came to me from Dr. Cook, now of the Oxford Retreat. The ovary was adherent to the pelvic wall, and just beneath the organ a small abscess had developed, which was diagnosed before operation, but which had already become the source of septic mischief before I put the knife to the case. An earlier operation would have saved her, but fortunately neither

Dr. Cook nor myself were responsible for the delay.

Irreducible displacement of the ovary, the organ enlarged and hyperæsthetic, lying in the cul-de-sac and acting as the cause of dyspareunia and general ill-health, is another legitimate indication for the removal of at least the diseased ovary. I have done the operation in several cases, all of them successful not only as to recovery from the operation, but as to ultimate results.

[Dr. Reed here exhibited a number of specimens from his cases illustrative of the pathological conditions to which he had alluded.]

THE "SPAYER" AND THE "NEURO-GYNEATRIST."

There are certain other cases for which removal of the ovaries alone is practiced and which I would really prefer not to discuss, but candor impels me to the task. When Battey christened his operation he called it "normal ovariectomy," thus implying that it was intended for the removal of healthy ovaries; and Goodell made bad matters worse by speaking of the removal of the appendages as "spaying,"—an absurd misnomer. At any rate, the idea of removing healthy ovaries for the relief of pain led others to remove them for other nervous phenomena; there presently grew up a serious abuse of the original idea of Battey, and doctors were to be found all over the country who were, in very fact, "spaying" women for the relief of hysteria, epilepsy, hysterio-epilepsy and allied nervous disorders. The recording angel alone knows the mortality. Conservative gynecologists on this side of the Atlantic called a halt. The Birmingham school planted itself firmly upon the proposition that none but manifestly diseased appendages should be removed. This edict has been accepted. We now remove the appendages—ovaries or tubes as may be—in those cases only when, on exploratory incision, we find them the seat of gross disease, and we resort to exploratory incision only when the symptoms point strongly to an ovarian or tubal origin of the disease.

But those of us, of the more conservative turn of mind, who feel that we have been somewhat instrumental in establishing these limitations to the practice, and who feel that we have thus delivered the unfortunate neurotic from the hands of the wanton "spayer," are not yet relieved of our solicitude. We see the fair object of our concern drifting into other and more terrible snares. Our friends, the alienists and neurologists, inform us that women's diseases, "their antecedents and sequences, have a peculiar fascination for the neurologist." The wily nerve doctor, to put himself in line for these cases, proposes to transform himself into a "neuro-gyneatrist." This specialist, *sui generis*, has only been christened and has not yet become a potent factor in womb affairs. Preparations for activity have only gone to the extent of arranging an artistic vocabulary. From the specimens at hand one could easily fancy that

the victim of an obscure pelvic pain, on consulting the "neuro-gyneatrist," would be informed that as a matter of fact she had a "visceral neurosis," which, although a "gyneasic disease," was yet one which existed chiefly in its "neural and psycho-neural factors;" or, to be more explicit, she has "inherent neuropathic degeneracy," the combined result of "ancestral nerve overstrain" and "acquired neuropathic decadence;" that as a final result there exists "nerve apathies" and "sequent neurasthenia," associated with more or less "afferent nerve insensibility" and "central motor atonicity;" and that, manifestly, she is in need of a treatment which will excite the "contractile tonicity of transmitted peripheral excitation over the vaso-motor neural mechanism of the pelvic viscera." Then the poor woman, after she recovers from her faint, naturally seeks shelter in the private sanatorium of that next product of progressive evolution in specialism—the Psycho-Neuro-Gyneatrist!

EXTIRPATION OF APPENDAGES VS. APOSTOLI'S TREATMENT FOR MYOMA.

But while we decry "spaying," and laugh at the "neuro-gyneatrist," there are circumstances under which the removal of the normal appendages for their influence upon at least a part of the nervous system, is found to be a most beneficial expedient. I allude to cases of uterine myoma. There has grown up a strange misconception of the way this operation effects a cessation of the hæmorrhage and a reduction of the size of the tumor in these cases. The prevalent impression is that the circulation is cut off. A moment's reference to the anatomical *résumé* given at the beginning of this address will show that the ovarian arteries are not touched in this operation, nor are any of the important vessels lying deep in the folds of the broad ligament. The interception of the vaso-motor nerve supply is the more plausible explanation. But whatever may be the *rationale* of the operation the fact remains that as an alternative to hysterectomy it has proven a life-saving measure. Thus, in the Spark Hill Hospital from 1879 to 1886 inclusive, the removal of both ovaries and tubes was practiced in 91 cases of myoma with 87 recoveries; while during the time, in the same institution and by the same operators, 42 hysterectomies yielded but 25 recoveries. But notwithstanding this excellent exhibit, ablation of the appendages in these cases promises to be superseded by the Apostoli treatment. I myself have passed through three epidemics of electricity. Another one is now upon us. I acknowledge that I am affected with a mild form of the disease. The potter's-clay electrode is a feature of my equipment. I am free to admit that I have seen myomata grow smaller and hæmorrhage cease

¹ C. H. Hughes, M.D. "Neural and Psycho-Neural Factor in Gyneasic Disease." *Alienist and Neurologist*, April, 1888.

under its use; and in other cases I have seen it fail completely. I, however, feel encouraged, and my conservative instincts lead me to hope for the ultimate success of the treatment, providing, of course, that the ascertained results shall show it to be safer as to primary mortality, and equally satisfactory as to ultimate results. But this exhibit has not yet been made; and until it is it may be well for us not to abandon the old for the new.

REMOVAL OF APPENDAGES IN PUERPERAL PERITONITIS.

A more recent extension of this department of surgery has come about through a knowledge of the condition of the appendages in puerperal and purulent peritonitis. I have not yet had the opportunity of doing this operation, although I proposed it in a case of abortion at two months. It was on the third day and the temperature was 104° , with extreme tenderness and some tympanites low down in the belly. The attending physician was not convinced of "the new pathology," as he termed it, and for lack of his cordial support the operation was declined by the patient and her friends. The case died three days later. I herewith present to you the uterus and appendages, which were removed at the autopsy. You will observe that the tube on one side presents a typical pyosalpinx of long standing, and that its walls are extremely dark and obviously gangrenous. There is here, near the occluded distal extremity, a slight perforation which bears evidence of having been an ante-mortem condition. Now, what relation did this perforation bear to the purulent peritonitis which proved fatal in this case? The tube on the other side is also occluded, but from the recent lymph about the fimbriæ and from the character of the contents, the probabilities are that occlusion took place only after the inception of the inflammation following the abortion. If, now, the gangrenous appendages had been removed and the peritoneum washed out and drained, there would have been a strong probability of recovery. I have recent private advices that Professor Tait has lately had eight consecutive recoveries under this line of treatment. Dr. Thoſ. Savage recently presented to the British Gynecological Society (*British Gyn. Jour.*, April, 1888), appendages which he had removed from a case of puerperal peritonitis. The ovaries were found enlarged and black; the intestines matted together by recent lymph, and the abdominal cavity contained a pint or more of non-offensive purulent fluid. "Medical men," he said, "were becoming alive to the necessity of calling upon specialists to operate, but they experienced difficulty in deciding when and at what period they would be justified in doing so." He then advised that all lying-in cases having feverish symptoms should be operated upon so soon as fluid could be detected in the abdomen; and I accept this as the

principle which, for the present, must guide us in undertaking this class of cases.

REMOVAL OF APPENDAGES FOR INTRAPERITONEAL HÆMATOCELE.

The splendid pioneer work of Dr. Francis Im-lach, of Liverpool, in establishing the relation of extraperitoneal hæmatocele to ruptured tubal pregnancy, has made us familiar with another set of conditions under which extirpation is practiced. He found rupture of the tube to be the underlying condition in the majority of all cases of intraperitoneal accumulation of blood, and he removed the appendages for the purpose of controlling the bleeding point. He reported sixteen successful cases two years ago. I had the pleasure of reporting my first successful case to the Ohio State Medical Society in 1887, and I have since had two more cases, both successful. The operation is simplicity itself. Open the belly; scoop out the blood clots; wash out the peritoneum, and remove the appendages on the affected side. As compared with the let alone treatment operative interference presents a small mortality—only two deaths in sixty cases which I have collected. If we are to judge of an operation by its results we may fairly state that this one has earned a place in surgery; and if we are to consider the pathological necessity for an operation we may say that in this instance it is simply imperative.

THE "UNSEXING" OF WOMEN.

There is a phase of this discussion which must not be omitted. It is made important by the recent utterances of gentlemen no less prominent than Dr. More Madden to the effect that extirpation of the appendages for conditions such as I have been describing unsexes a woman and deprives her of the power of propagation; and I am apprehensive that the delusion is entertained by other very respectable members of the profession who have not looked into the matter. I feel that from what I have already said, and from the specimens which I have already exhibited, you are convinced of the absurdity of the idea. As a matter of fact the operation could not deprive a woman of her fecundity, for the very good reason that the incurable disease with which she is afflicted has already deprived her of that function, and there is no possibility of its restoration. But I presume reference is had to the notion that following the removal of the ovaries there is a decadence of the sexual appetite. In the first place this is a mistake, and has been denounced as such by every operator of importance, including both Battey and Tait, who have pointed out that the removal of painful organs from the pelvis is promotive rather than destructive of sexual feeling. But grant that it were true. Is a woman to go through life racked with pain that she may satisfy the lust of a man? The proposition is too repul-

sive to be discussed in decent society, yet this is logically just what Madden is teaching. There are others, doubtless, who are prompted to advise against operation for the reason that the conservative line of treatment is vastly more remunerative to the practitioner; but I don't know that this view helps matters much, for it amounts only to a choice between pruriency and venality.

EXPLORATORY INCISION.

It were idle to say that diagnosis of these "out of the way" organs is easy. As a rule, it cannot be made at a single examination, but has to be arrived at after a study of the case embracing numerous examinations and covering a considerable period of time. Often the diagnosis cannot be carried beyond the point of presumption without an exploratory incision. Here is another point on which the profession has gone into error. Mr. Tait inaugurated exploratory incisions for the purpose of confirming presumptive diagnosis, and announced the definite limitations under which he did the operation; but the profession at once exclaimed, "Tait says when you don't know what is the matter with a woman cut her belly open and see," and many of them did so. Now, Mr. Tait never said anything of the sort; but he did say "that in every case of disease in the abdomen or pelvis, in which the health is destroyed or life threatened, and in which the condition is not evidently due to malignant disease, an exploration of the cavity should be made." In this Mr. Tait shows a spirit, not of recklessness, but of marked conservatism. I have, for instance, successfully removed a 30-lb. sarcomatous tumor of the ovary in a case in which the symptoms of malignancy were evident; and the records of Spark Hill furnish another instance. The time has gone by when hands must be kept off all malignant cases. The law might therefore be changed to read: "when the condition is not evidently due to manifestly *irremovable* malignant disease."

CONCLUSIONS.

In conclusion, then, let us answer the inquiry, When should the general practitioner advise extirpation of the uterine appendages?

1. In cases in which, after adequate investigation, he is assured that there is intra-tubal accumulation.
2. In cases in which, from congenital deficiency of some of the organs, there can be no healthy exercise of the menstrual function.
3. In cases of chronic ovaritis, giving rise to intolerable pain, and in which cure has been demonstrated as impracticable by conservative means.
4. In cases of irreducible displacement of the ovaries giving rise to severe pain.
5. In cases of large uterine myoma giving rise to dangerous hæmorrhage, and in which the elec-

trical treatment has failed after a reasonable trial, and finally, in which extirpation of the appendages can be practiced with greater safety than hysterectomy.

6. In cases of puerperal peritonitis and intra-peritoneal accumulations in which, after opening the abdomen, the appendages are found diseased.

7. In cases of intraperitoneal hæmatocele in which, on exploration, a bleeding point is found in a ruptured tube.

8. Exploratory incision should be advised in all cases in which any of the foregoing conditions are reasonably suspected, and in all cases "of disease of the abdomen or pelvis in which the health is destroyed or life threatened, or in which the condition is not evidently due to" irremovable "malignant disease."

ORIGINAL ARTICLES.

OXYGEN ENEMATA AS A REMEDY IN CERTAIN DISEASES OF THE LIVER AND INTESTINAL TRACT.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. H. KELLOGG, M.D.,

SUPERINTENDENT OF THE MEDICAL AND SURGICAL SANITARIUM AT BATTLE CREEK, MICH.

The importance of the rôle played by oxygen in the human system has no parallel among the other substances required for the healthy maintenance of the body and its functions. A man may live a month without food, a week without water, but dies in a few minutes when deprived of oxygen. Oxygen is the vitalizing agent of animal and vegetable life. It aids both in building up and in tearing down those complex molecular compounds which characterize all living forms. The intensity of the life which an animal lives, is in exact proportion to the amount of oxygen which it breathes. The sluggish life of the frog is the natural result of its imperfect breathing apparatus, just as the astonishing activity of the humming bird is rendered possible by the perfection of the respiratory system.

The reception into the body of an increased amount of oxygen means an increased amount of vital work. Tissue building, and tissue disintegration are only possible by the aid of oxygen. Glandular activity, either secretory or excretory, is equally dependent upon a supply of oxygen. The process of digestion, the most essential element of which is gland action, is hence very clearly dependent upon the supply of oxygen. That this is not merely a theoretical conclusion, or a deduction of physiological chemistry, is evidenced by the prodigious digestive powers of the woodsmen and the mountaineer, and the correspond-

ingly feeble digestive ability of the persons of sluggish or sedentary habits. The chronic dyspeptic who resists the therapeutic influence of pepsins and pancreatins, peptones, and all sorts of artificial peptogens, and the most carefully prepared medicinal prescriptions, sometimes runs away from the polypharmacy of his physicians and spends a few weeks in the woods, in the mountains, at the seashore, anywhere out-of-doors, pays no attention to diet, eschews digested foods and liver stimulants, and in a month comes home with a clean tongue, and stomach intact, chiefly because he has been taking into his system daily an extra supply of oxygen. The clearing out of organic rubbish from the nooks and corners of the system, the better heart action, the quickened vital activities of the whole body, have enabled his digestive glands to make a better quality and larger quantity of digestive fluids. By this means, the septic condition of his alimentary canal has been overcome. The abnormal activity of microbic ferments has been restrained, and the toxic influence of the ptomaines and other poisons developed by their action has been prevented. The albumen and gluten and other nitrogenous elements of the food, instead of being converted by fermentations into unusable and obnoxious compounds, to be eliminated by the kidneys and other emunctories, are now made into normal peptones, good blood, and finally organized into nerve and muscle, giving strength and vigor in place of the old feebleness and enervation. The starch, sugar, and fats, instead of being converted into alcohol, carbonic, acetic, and butyric, acids, and thus worse than wasted, are now supplied to the blood in such form that the body is provided with ample supplies of heat and force, and has a surplus to store away, thus making a gain in flesh. It would be unfair to claim that oxygen is the only factor in the production of this change, but certainly it is the most potent one.

The wonderful vitalizing and invigorating influence of oxygen is unequalled by any other agent in nature. I have seen a patient suffering with double pneumonia, with purple lips, livid cheeks, glazed eyes, a fluttering, almost uncountable, pulse, breathing shallow and at the rate of fifty a minute, suffering great distress, and apparently just at death's door—I have seen such a patient revived in a most marvellous manner, by the inhalation of pure oxygen. The normal color returned to the cheeks and lips. The eyes brightened, the pulse became stronger and slower, the respiration fuller and less frequent, and the patient fell into a quiet slumber, awakening only when the oxygen was withdrawn. The subtle influence of oxygen, when condensed and made active by its combination with the red corpuscles, is something which we may not fully understand, but we must admit the facts of experience, and of

physiological science which attest the marvellous energy of this simple substance in stimulating and supporting the vital activities of the body.

I have made use of oxygen by inhalation for a number of years in various conditions, having been led to do so by what I learned of its use and apparent results while pursuing medical studies in Paris. I have seen some good results from its use in this manner, especially in pneumonia, and emphysema. The great objections which I have found to its use in this manner have been these:

1. The difficulty of making the blood take up, through the pulmonary mucous membrane, much more oxygen when breathing pure oxygen than when breathing ordinary air. The air contains about one-fifth its bulk of oxygen. Of this, not more than one-fourth is ordinarily removed during respiration. There being such a surplus of oxygen in the air, the addition of any amount, even to the extent of providing the lungs with pure oxygen, does not very greatly increase the amount taken up by the blood, except in cases such as pneumonia and emphysema, in which the amount of air received into the lungs is abnormally small, and the amount of carbon dioxide in the blood abnormally large.

2. The great expense involved in administering the remedy, if used in such quantities as to be of any material value. It could hardly be expected that a few breaths of pure oxygen once or twice a day would accomplish any very great therapeutic results. This would be very much like adding to the rations of an under-fed man two or three kernels of corn, when he was already receiving a hundred times as much several times a day. I have estimated that to increase the amount of oxygen actually received into the blood in twenty-four hours, so small an amount as one per cent. would require the respiration of about twenty-two cubic feet of oxygen gas, the actual cost to make which would be not less than two dollars, and if purchased, the cost would be fully three times as great.

3. A third objection to the use of oxygen by inhalation for the treatment of disorders of the stomach, intestines, and liver, is the fact that so very minute a proportion of the small amount of oxygen received ever reaches the diseased parts, they receiving only their proportionate share of the total amount taken in by the lungs, so that really very little benefit could be expected to accrue to these organs by the use of oxygen in the ordinary method. When making some experiments with sulphuretted hydrogen by the method of Bergeon, the idea occurred to me that oxygen might be used in the same way, and I at once saw the great advantage of using oxygen in this manner for diseases of the digestive organs, and especially the liver, since oxygen taken into the intestines would be absorbed by the portal

vein, thus going direct to the liver, instead of being distributed to the whole body.

I had at this time under my charge a most obstinate case of lithiasis. The patient had had for a long time a very abundant deposit of uric acid and urates. A non-nitrogenous diet, copious water drinking, and a variety of remedies, had apparently no influence upon this symptom. The patient was losing flesh and strength, and was scarcely able to be about. Skin muddy, sclerotics dingy, tongue foul, constant headache, and a brassy taste in the mouth. I was deterred from attempting to employ the gas by enema for some weeks after the idea occurred to me, by the reports of pain occasioned in the use of sulphur-retted hydrogen enema by the admixture of air. I determined to make the attempt, however, and on June 20, 1887, by my request, one of my assistants, administered to the patient two litres of pure oxygen gas. The treatment was repeated daily for about four weeks. After the first three days, both the uric acid and the urates wholly disappeared from the urine, and did not again reappear while the patient was under treatment except on two occasions, when treatment was omitted for a day or two, soon after the beginning of the treatment, and then in only very slight amount. The brassy taste disappeared from the mouth, tongue became clean, the eyes and skin clear, the headaches ceased, the patient gained several pounds in weight. All these improvements in symptoms appeared within a few days after beginning the oxygen enemata.

That oxygen may be taken up by the intestinal mucous membrane, or that an interchange of oxygen and carbon di-oxide may take place through this membrane, might be inferred from well-known facts in comparative physiology. For example, in certain fishes the mucous lining of the alimentary canal performs a very important part of the work of the respiratory system. Some members of the gar family are killed almost as quickly by cutting off the supply of oxygen to the alimentary canal as by interrupting the gill respiration. Great numbers of illustrations might be given from the lower classes of the animal kingdom, in which the entire process of respiration is carried on by the mucous lining of the alimentary canal. Why, then, should not man also be able to receive a very appreciable and efficient amount of oxygen through this channel?

But I am able to present something more than theoretical considerations for believing that the oxygen administered in this manner is absorbed. I have frequently asked patients to whom the gas has been administered to observe carefully respecting the possible escape of the gas as flatus or in eructations, and have often been assured that no such escape occurs, although usually there is an escape of flatus within two to four hours after the treatment is administered, often

soon after unless the patient is instructed to restrain the tendency to the escape of gas. I am collecting specimens of gas at different intervals after administration, for the purpose of determining the length of time it must be retained to enable complete absorption or interchange to take place.

To make assurance doubly sure, I made the following experiment upon a guinea pig on July 20, 1887:—

After placing the animal under chloroform, the abdomen was opened, and the intestines drawn out and spread out in such a way that the dark portal veins were in full view. A quantity of gas was then injected into the rectum, and to my great satisfaction I found that the dark venous blood assumed a bright red hue almost equal to that of arterial blood within less than one minute after the injection of the gas, showing the rapidity with which the absorption of the oxygen takes place. To confirm the result, I allowed the oxygen to escape from the bowels, afterward replacing it, and repeating the experiment several times. In each instance the color of the blood in the mesenteric veins assumed its ordinary dark purple color immediately after the oxygen was withdrawn, while the bright color returned almost instantly when the new supply of oxygen was introduced.

The processes of digestion and excretion are chiefly those of oxidation and hydration, considered from a chemical standpoint. Dujardin-Beaumetz has shown that the use of oxygenated water materially aids digestion. By introducing pure oxygen gas directly into the intestinal canal, digestion may be materially aided, especially in cases in which the intestinal portion of the digestive apparatus is the part chiefly at fault.

It seems to me to be entirely probable that oxygen enemata may be advantageously employed in quite a variety of cases. I believe that it may be advantageously used in all cases in which there is such a disturbance of the normal interchange of gases in the lungs as deprives the system of its proper amount of oxygen. The mucous membrane of the intestines presents an absorbing surface, very small, it is true, when compared with the amount of surface presented to the air in the lungs, and yet it is sufficiently great to allow of the introduction into the system of a large amount of oxygen in addition to that which can be gotten in through the lungs; and this additional quantity, though small when compared with the total amount received by the lungs, may be of sufficient value to the system to be of immense advantage to it, especially on account of its introduction at this particular point in the circulation. The notable functional disturbances of the stomach which accompany various pulmonary disorders, such as emphysema, chronic bronchial catarrh, chronic pleurisy, pneumo-

thorax, etc., suggest a very important relation between the digestive function and the quantity of oxygen received through the lungs. The same relation is also suggested by the frequency with which dyspepsia occurs among sedentary persons who are habitually air-starved.

The administration of oxygen by enema should prove especially serviceable both in functional and organic diseases of the liver. If we accept the views of Dr. Fothergill and others respecting the relation of the liver to the excretory work of the kidneys, it being held that the liver aids in some way in the conversion of uric acid and allied compounds into urea, it is at once apparent that the introduction of a large amount of oxygen into the portal vein ought to be of service to a feeble, overworked, or disabled liver.

We should expect, also, that this remedy would prove serviceable in cases of disturbance of the glycogenic functions of the liver. We should expect also that a cirrhotic or fatty liver would, by the conversion of the venous blood of the portal vein into arterial blood, be better able to do its work than with its ordinary blood supply, which is perhaps the poorest in oxygen of any in the body. I do not forget, of course, that the liver receives a part of this blood from the hepatic artery; but this is a comparatively small part of the total amount received by this enormous and wonderfully active glandular structure, and experiment has shown that the liver may continue its work after entire suppression by ligation of its arterial blood supply.

The following cases showing the influence of oxygen enemata upon the urine seem to support the above views in a most striking manner:

Case 1.—W. P., a man æt. 28, the first case in which the oxygen enemata were employed. A case of chronic lithiasis. The exact amount of uric acid present in the urine at the beginning of the treatment was not determined, but there was the most abundant deposit of urates and uric acid I have ever observed. The deposit disappeared within two days after beginning treatment, and a careful quantitative analysis for uric acid made August 4, six weeks after beginning the treatment, showed the amount present to be only .29 grams, considerably less than the amount ordinarily found in healthy urine. This case had stubbornly resisted all other remedies, dietetic and medicinal, for several weeks before the oxygen enemata were employed.

Case 2.—A lady, æt. about 50, rheumatic, and a marked subject of lithiasis. Urine showed a heavy deposit of uric acid and urates. Analysis showed the amount of uric acid present as follows:

Before taking Treatment.—July 29, 1.37 grams; August 1, 1.50 grams; August 2, 1.84 grams.

After beginning Treatment.—August 3, .71 grams; August 8, .64 grams; August 10, .64 grams; August 14, .22 grams.

The normal amount of uric acid is placed by most authorities at less than .5 grams in twenty-four hours. It thus appears that in the second case the amount of uric acid which was at first more than three times the normal amount was diminished more than one-half the first twenty-four hours, and was in a few days reduced to less than one-half the ordinary amount.

Case 3.—A lady, about 50 years of age, who, had been reduced very low by a digestive disorder which threatened her life. For several months she had been subject to frequent attacks of bilious vomiting, sometimes continuing for several days. The vomit was sometimes grass-green, at other times black and ill-smelling. The dejections were of the same character. The patient suffered almost constantly from a most depressing nausea, even when no food was taken for days together. For weeks the only food retained was peptonized beef taken per rectum. There was a steady decline in strength and flesh until the patient was reduced to a skeleton, and was so weak that she could scarcely raise her head from the pillow. Every remedy was tried that offered any hope of relief, medicinal, non-medicinal, and dietetic, but with little relief, and that only very partial and temporary so that her friends and myself as well were about ready to give up in despair. At this crisis, it was determined to make a trial of the oxygen enemata, notwithstanding the feeble condition of the patient, which added somewhat to the difficulty of administering the treatment. As a result, most marked improvement began at once. The nausea disappeared, digestion improved, vomiting decreased, the patient began to gain in flesh, the stomach regained the power of digestion, and in a few weeks the patient was able to return to her home restored to health. At last accounts, within a few days of this writing, she was still doing well, gaining daily in flesh and strength.

Case 4.—A young man, about 30 years of age, suffering from acute rheumatism. The attack was a very severe one, and the urine was loaded with uric acid and urates. Oxygen enemata were begun on the fifth day of his sickness, when the disease was at its height, and with rest in bed, regulation of diet, simple tepid sponging, and sweating baths, were practically the sole treatment employed. The marked improvement after the use of oxygen was begun is evident from the following reports of analysis of urine:

April 2. Before beginning oxygen enemata. Quantity, 3300 cc. sp. gr.; 1028. Urea, 15.5 grams. Very heavy deposit of urates and uric acid.

April 10. Quantity 930 cc. sp. gr., 1025; urea, 37 grms. Slight, fleecy deposit of urates.

April 11. Quantity 900 cc. sp. gr., 1020; urea 39 grms. No deposit.

April 24.—The urine has become alkaline, with a slight deposit of phosphates.

Analyses of urine were made nearly every day between the first and last of the above dates. The results showed, as indicated above, a steady diminution in the amount of uric acid and a corresponding increase in urea, which was so marked as to indicate an unmistakable influence from the oxygen enemata in bringing about the favorable results.

Case 5.—Mr. H., a diabetic patient. Came to the Sanitarium for treatment on April 1, 1888. A quantitative analysis of the urine made April 2 showed 256 grms. of sugar. In less than a week this was reduced by a diabetic diet consisting of milk, eggs, gluten, cream, and non-farinaceous vegetables, to 152 grms, the amount reported by his home physician while the patient was subsisting upon a diet of meat, eggs and bran bread. At this time, the oxygen enemata were begun, two litres being administered daily. On May 2, after three weeks' treatment, the amount of sugar had been reduced to 3.1 grms. The patient has had no medicinal treatment whatever, and his diet has never at any time since coming under my care been wholly free from starch. The following table of analyses for sugar shows the gradual diminution in the quantity of sugar after beginning the oxygen enemata:

April 5, 147.2 grms.; April 9, 80 grms.; April 15, 73.6 grms.; April 21, 44.8 grms.; April 27, 25.6 grms.; May 20, 3.2 grms.

Certainly the remarkable decrease in the daily amount of sugar passed in the urine must be attributed to some efficient cause, and the only one to which any such result could be reasonably attributed was the oxygen enemata, as the patient had previously been kept for months upon a strictly diabetic diet, without any favorable result. Future experience, however, must determine whether the results obtained are anything more than temporary.

Case 6.—A man of 28 years, suffering from Bright's disease of the kidneys—chronic parenchymatous nephritis—passing large quantities of albumen daily, and abundance of casts. Examination of urine made before beginning the treatment showed six grams of albumen, and smooth and granular casts, pus, uric acid, and urates. Quantity 1100 cc. sp. gr., 1015. Urea, 24 grms. After six weeks treatment with oxygen enemata, the amount of albumen present was found to be less, casts and pus less abundant. Quantity, 1490 cc., sp. gr. 1017. Urea, 37.25 grms., no urates nor uric acid.

Numerous other cases might be added to this list, but the above are sufficient to show what can be done in a variety of cases in which, upon theoretical grounds, we should expect benefit from the administration of oxygen in this manner, if it is a really efficient therapeutic agent. I trust the results shown are at any rate sufficiently striking to call the attention of the profession to

the value of oxygen as a remedial agent, when administered in the manner described in this paper.

Oxygen enemata may be administered by means of the apparatus used in administering sulphuretted hydrogen; but it may be much more accurately used by means of an apparatus described by the writer in a paper entitled "A New Form of Apparatus for Administering Gaseous Enemata," read before this Section one year ago. The treatment may also be given much more conveniently with this apparatus.

GRADUAL DILATATION OF ŒSOPHAGEAL STRICTURES.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY T. D. DAVIS, A.M., M.D.,

OF PITTSBURG, PA.; SURGEON TO MERCY HOSPITAL, SURGEON TO ST. FRANCIS HOSPITAL, FELLOW OF THE AMERICAN ACADEMY OF MEDICINE, ETC.

Obviously there is no more serious lesion than closure of the only passage leading to the stomach. Fortunately nature has guarded the œsophagus so that its freedom from disease is noteworthy, and its most frequent lesions are the result of external causes, neoplasms, or due to diseases of contiguous tissues. So rare and surely fatal have strictures of this passage been that until within recent years but little has been done in attempting permanent relief. The gravity and urgency of the symptoms have possibly prompted equally grave and heroic remedies, such as divulsion, cutting, gastrotomy, etc., until now it seems needful to call attention to more conservative methods of treatment. In striving for the brilliant, possibly the safer and more simple plans have been neglected.

Neoplasms of the passage itself, or of adjacent structures, may cause stenosis, but I wish now to consider only cicatricial strictures of the œsophagus. These are produced by any cause that will destroy its coats. When either its mucous or sub-mucous coat is destroyed, the resulting cicatrix is composed of smooth, hard, imperfectly organized tissue, that projects in ridges, or causes the adjacent mucous membrane to be puckered up into folds. If the continuity of the deeper tissues be also destroyed and the muscular coat invaded, the resulting cicatrix is very firm and callous, and the symmetry of the passage much contorted. Not only may the scar itself thus cause stenosis, but by its derangement of the circulation a secondary hypertrophy of the mucous membrane may result.

Direct violence has been known to cause such destruction of these tissues—such as injuries by sword juggling; swallowing foreign substances, as bones, coin, artificial teeth, or the too violent efforts to remove them. Syphilis, too, has in recent times been supposed to cause ulcers of the œsophagus, and it is not entirely free from the non-specific round ulcer. By far the most common

cause of such destruction of tissue and its resulting cicatricial stricture is the swallowing of caustic substances. The comparatively recent introduction of powerful caustics into domestic use has alarmingly increased the number of these cases. Dr. Campbell has reported to this Association¹ no less than twenty accidents from swallowing "concentrated lye," occurring in his immediate neighborhood, and from my own experience I should judge the number throughout our country, if known, would prove appalling. In the last ten years six deaths from swallowing concentrated lye have been reported to the Board of Health of Pittsburg. But these are only those who died from the immediate effect of the caustic, and by no means represent all who have perished from this substance, because those who died from the later effects would be reported, even if the primary cause was known, as dying from inanition, marasmus, etc.

It has been my fortune to meet a number of these accidents, and the success of my treatment has led me to present the subject for your consideration to-day. I can possibly best do so by presenting the cases in detail, for brevity omitting minor points.

Case 1.—In April, 1880, Henry C., aged 4 years, had been playing in the yard and came crying into the house with his mouth bleeding, leading the nurse to suppose that he had fallen out of his swing. He vomited and slavered thick saliva, tinged with blood, for several hours. On seeing him four hours after the accident he presented no appearance of shock nor any febrile reaction. His mouth was fiery red, leading a physician who had been called in before I could see him to suspect diphtheria. There was no sign of excoriations of tongue or fauces, but his mouth looked more as if he had been chewing nettles or some non-corrosive irritant. Oil and demulcents were freely given and by this time they were well retained. On the following day evidences of corrosive action were quite manifest, especially in the center of his tongue, but not at all in the fauces. From information afterward received, I have no doubt that he swallowed a solution of concentrated lye from an old empty can that had been carelessly thrown in the yard.

As his mouth rapidly healed, and he showed no further stomach trouble nor constitutional effects, I unfortunately concluded that he had escaped swallowing any of it, or if he had, that it was so weak as to do no harm. In five weeks I was called to see him again, when I was informed that he was having repeated attacks of vomiting, soon rejecting the small quantity of food he took, together with an immense quantity of slimy mucus. He had lost considerable flesh, and his face presented the haggard, anxious look of craving hunger. An œsophageal stricture was immedi-

ately diagnosed, and, with the assistance of Dr. W. R. Hamilton, a No. 2 flexible catheter was with great difficulty passed through to the stomach. The difficulty was caused, first, by the great dilatation of the œsophagus that had taken place above the stricture, making it extremely hard to find the natural passage and avoid making a false opening through the attenuated walls; and, secondly, the size of the stricture itself, which grasped firmly the small catheter. These difficulties, together with the struggles of the child, made the operation one of considerable delicacy and caution and rendered the prognosis, by every physician who saw him, extremely grave.

Immediately after passing the catheter, the child would be able to swallow a few spoonfuls of milk, but in a few hours the tenacious mucus would again accumulate and occlude the passage. In a short time the child realized the relief afforded by the dilatation and waited rather anxiously for the operation, often bringing me the tube to insert. In order not to hurt him, that I might retain his cooperation, I increased the size of the tubes very slowly, and thus stumbled almost on a very satisfactory plan of treatment—that of *very gradual dilatation*.

In six weeks, by thus carefully, regularly and surely dilating, without pain and with but little inconvenience, the opening had reached a size that I felt safe to allow the parents to use the bougies themselves. I increased them gradually, and by five months we were using a No. 2 rectal bougie, which I considered about the normal caliber of the œsophagus of a child of that age, although the relative diameter and length of the œsophagus of children I have nowhere found estimated or recorded.

This case has ever since been under my observation. For the first few years the bougies had to be inserted every few weeks. If he failed to masticate his food thoroughly it gave rise to retching. During the last year the tube has been inserted but a few times, and the marked symptoms of the stricture have disappeared.

Case 2.—In June, 1881, Bessie W., aged 30 months, drank some water out of a can half full of concentrated lye, which had been carelessly let stand in a neighbor's yard. I saw her a few moments after the accident, and immediately gave her half a tumbler of vinegar, which she drank eagerly, although it was at once rejected by the stomach. Her tongue, cheeks and fauces were completely whitened, and she was screaming with pain. She was bleeding freely from the mouth. Thickened mucus drivelled out in streams, and every few moments she would attempt to vomit. I followed the vinegar with table oil, and as it was rejected gave quantities of milk. She was pale and cold, and the manifestations of shock quite marked. She reacted speedily and in a few days the deeply burned portions of her mouth were

¹ "Journal of American Medical Association," October 27, 1883.

more clearly outlined. So deep was that in the center of her tongue that it was fully three weeks in healing.

Knowing beyond doubt that she had swallowed considerable of the liquid fire, at the end of the first week I introduced the largest size English flexible catheter to the stomach. It caused comparatively little distress, but was tinged with blood on its withdrawal. After a few days I introduced it again, and so every alternate day. But soon it caused too much pain and evident irritation, so I was forced gradually to decrease the size until in a month only the smallest sizes could be used with freedom from pain. At this time the child lived on milk alone and was well nourished. The œsophagus had two marked strictures, one opposite the cricoid cartilage, where it is normally constricted, and a still more tense one opposite the middle of the sternum. Neither of these were simple annular strictures, for on removing the bougie it always presented a spiral form, the result of its moulding in the passage. I had succeeded in again dilating the passage considerably, when the child unfortunately picked up a grape seed from the floor and swallowed it. The seed passed the first stricture, but became wedged in the lower one. It seemed impossible to move or pass it. Prof. James McCann saw the case with me at this critical stage, and succeeded in passing a small whalebone fillet, but joined with me in the gravest prognosis. I nourished the child by enemata for five days, when at last I succeeded in forcing the seed through.

For several weeks after, the progress of the case was quite satisfactory. During the third month I invited Dr. Hamilton, who had seen the first case, with me to visit this child. He readily passed a number eight catheter, but against my best judgment, also passed Nos. 9 and 10, insisting that it would do no harm and that I was going too slow. The largest bougie caused much pain and was slightly tinged with blood, the first I had seen since the original burn was healed. The next day she had greatly increased difficulty in swallowing, with some feverish symptoms. I was compelled to use a much smaller instrument, and on the fourth day found the catheter welling up full of pus. The too rapid dilatation had caused an abscess. For a number of days I passed no instrument, but nourished her entirely by enemata.

On resuming dilatation the progress of the case was slow but satisfactory up until a rectal bougie could be introduced easily, which was about six months from the beginning of treatment. This case is also under my observation and now, after seven years, is entirely free from any difficulty in swallowing, although the caliber of the passage is certainly less than normal. One cause of this perfect success, I believe to be, that the early treatment kept any dilatation from occurring or

any cul-de-sac being formed above the stricture.

Case 3.—Ethel R., aged 20 months, in June, 1885, drank a solution of concentrated lye, which had been prepared for scrubbing purposes. For five weeks she was under the care of a homeopathist. Her mouth was quite badly burned, but it healed in two weeks. When I first saw her she was the picture of distress, the emaciated body, hollow cheeks, gaunt, famished expression and sunken eyes, all told the unmistakable story of starvation, and yet her homeopathic physician had assured her parents that she was over all effects of the lye, but was now simply suffering from worms! On examination a stricture was found near the stomach. The dilatation of the œsophagus above the stricture was sufficient to hold a teacupful of food and retain it for an hour. With much patience and no little difficulty the opening was found, and day by day the gradual dilatation was kept up, as in the previous cases, and in six months resulted in complete recovery. This case differed from the others in presenting undoubted evidence of ulcers in the stomach, which however healed in due time, and now, after three years, she is enjoying good health, but like the first case is easily choked.

Beside these cases, I have attended two children whose mouths were badly burned with lye, but who fortunately did not swallow any. In addition, I have the names of four more who perished from the immediate effects, and two the results of which I do not know. This makes ten deaths, five recoveries and two unknown, or seventeen in all from concentrated lye in this city alone, beside the many unreported.*

In dilating these strictures I used the common English catheter straightened out, and mostly without their wires. Œsophageal bougies for children are not on the market, and, at any rate, increase too rapidly in size for gradual dilatation, beside the catheter, always easily attained, has the advantage of enabling you to introduce food into the stomach. On introducing these catheters the head is held as far back as it will go. The bougie is well oiled with butter, on account of its leaving no unpleasant taste. The instrument held lightly between the thumb and first two fingers is then slipped past the base of the tongue well against the posterior wall, in order to escape the epiglottis. With a slight rotary motion it is passed quickly to the stomach, where it is allowed to remain during two or three respirations. There is much less danger of exciting cough or retching if the finger or tongue depressor is kept out of the mouth. The lower two-thirds of the œsophagus being a very insensitve passage tolerates the instrument readily, and causes but little distress if held well back from the epiglottis.

* Since presenting this paper the daily press of this city has recorded the deaths of four more victims from swallowing concentrated lye, and there is still a fifth case now under treatment in my immediate neighborhood.

From a study of these cases I am well satisfied that: 1. Too much weight has been given to spasmodic stricture of the œsophagus by Michel, Campbell, Smith and others; that involuntary muscles can even have tonic spasms at all is a question, but to hold with Campbell that such a spasm can continue for eight days, calls for a stretch of the imagination beyond my power. At no time did I have any evidence of spasmodic stricture in these cases. Any difficulty in introducing the dilators was due solely to causes mentioned. The relief given by passing the bougie is readily explained, not by its overcoming spasm, but by its removing the tenacious mucus or some article of food that had clogged the passage or lodged on the shelf of the stricture.

2. The advantage of the early introduction of the bougie to prevent dilatation of the œsophagus above the stricture is clearly manifested by the history of these cases.

3. The second case certainly contrasts the rapid and gradual plans of treatment, to the great if not vital advantage of the latter. To "make haste slowly" is the only safe rule. The gradual being almost painless and giving great relief secures the co-operation of the patient. It avoids too great irritation and danger of inflammation or rupture, all of which are likely to follow rapid dilatation.

4. Are not these seventeen accidents enough to second Dr. Campbell's proposition, that some legal restriction should be placed upon the sale of this intensely dangerous substance.

5. Finally, I shall watch with interest to see if any of these cicatrices shall develop malignant disease.

DR. WM. H. PANCOAST, of Philadelphia, asked what form of bougie Dr. Davis had used and whether he had ever tried the olive-pointed or the rat-tail bougie.

DR. DAVIS replied that he used only the common English catheter, which he considered the best adapted to the treatment of children, in whom this accident was most common.

DR. I. N. QUIMBY, of New Jersey: I can endorse what Dr. Davis has said in regard to gradual dilatation of œsophageal strictures. I accept the principle also, as it applies to the dilatation of urethral and other strictures. I have seen very much harm done by too rapid dilatation, which seems to lacerate, and instead of overcoming seems to rather retard and perhaps make the stricture more firm. This probably indicates that we should go slowly. In a case which came under my observation, I took a little rubber bougie, or rather rubber tube, introduced it and then inflated it with a small syringe, thus producing a gradual dilatation, until a little discomfort was complained of by the patient, but never enough to cause pain.

DR. PANCOAST: There are one or two additional important features of the paper, one of which is

that just referred to by Dr. Quimby, and which, I am happy to say, expressed most happily my views on this subject. I refer to the fact that all mucus passages of the body should be treated by slow and very gradual dilatation. It is the most efficacious method of treatment. In this connection I have a manoeuvre which I might mention to you. I have a spontaneous dilatation, by hydraulic pressure, it is true, which I secure in each case by directing the patient every time he passes urine to catch the urethra and hold it until the stricture is dilated to a slight degree by the urine in its effort to escape. I do not use the urethrotome until it is settled that no further dilatation can be carried on by other means.

The "rat-tail" and filiform bougies of French make are of great service. I have also used the hydraulic dilatation spoken of by Dr. Quimby, with success.

The worst cases of œsophageal stricture that I have ever had were, one from lye, one from cancer, and one from sulphuric acid. The patients recognize very promptly the benefit which is derived from this gradual method of dilatation. I heartily endorse the suggestion that the members of the American Medical Association be requested to report, at the next annual meeting, all the cases they have observed of stricture of the œsophagus from concentrated lye.

Another point to which I desire to refer is the fact that muscular spasmodic stricture of the œsophagus does unquestionably occur. We can easily understand how this is likely to occur if we refer to the anatomical relations of the œsophagus as it passes through the diaphragm. In the diaphragm there are three openings, the first of them for the passage of the aorta, and the most posterior and right behind that of the œsophagus, is an osseo-aponeurotic opening. The second opening is for the vena cava, and is a tendinous opening, as it is right at the junction of the central and middle leaflets of the central tendon. It is surrounded on all sides by tendinous structure. The third opening, however, is right through the muscular substance of the diaphragm. It is elliptical in form and is intended to transmit the œsophagus. It is intended to act like a sphincter upon the œsophagus. Too sudden swallowing, as we have doubtless all learned from our own experience, is followed by a closure of this portion of the œsophagus and momentary retention of the food in that passage.

DR. DAVIS: I merely want to call attention to the fact that all the cases reported in my paper were under 5 years of age, and that for this reason no complicated apparatus could be employed.

Second, with regard to the olive pointed bougie: My idea in the treatment of these cases was continued pressure. The olive point dilates while passing through, but you do not keep up the pressure by it. Having the same diameter through-

out, the catheter makes constant and even pressure, no matter to what extent it is inserted. Again, in speaking of spasm of the œsophagus, I said "tonic" spasm. I claim there is no such thing as a tonic spasm, like that lasting eight days. Of course I recognize spasmodic constriction.

DR. PANCOAST: I think that the Doctor will recollect that the great value of the filliform bougie, the great value of the bougie with olive tip, that the great value of the rat-tailed bougie is the fineness of the tip and the fact that the largest calibre of the instrument being higher up, keeps the fine point of the instrument more directly in the centre of the passage—and that is the chief value of it. My friend should also remember the difficulty experienced by many in swallowing pills, as is so often expressed by the patients.

DR. I. N. QUIMBY supported Dr. Davis' view in regard to tonic spasm of the œsophagus. He did not see how such constriction could be possible.

ELECTROLYSIS IN THE REMOVAL OF NASAL AND PHARYNGEAL NEOPLASMS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY D. S. CAMPBELL, M.D.,
OF DETROIT, MICHIGAN.

The therapeutic value of the galvanic current in urethral hypertrophic catarrh, fibromata and mucoid growths of the uterus, etc., has been presented with considerable force of late by various writers, but more notably by Apostoli, of Paris.

He has clearly demonstrated from clinical evidence that this "not strictly surgical nor strictly medical" form of treatment has special advantages over others in the treatment of fibroid and mucous growths of uterus. In his narrations he claims to have suppressed the miseries constituting the fibroidal symptomatology to the enormous per cent. of 95, by either a sensible reduction or complete absorption of the growths. And though his remarkable successes—aided, perhaps, by the subtle manifestations of its properties—may have given color to his reports, I am fully persuaded, after a careful manipulation of this particular form of chemical force in a large number of cases suffering principally from nasal and pharyngeal neoplasms, that its therapeutic value is worthy of consideration.

But, in dealing with this apparently hidden form of treatment, I regret exceedingly that I can on this occasion but briefly allude to the manner in which material changes take place in tumor structures, as the question of greatest interest to practitioners is centred in the purely clinical and practical results of its use.

Practical experience has shown that the con-

ductivity of tissues offers a fair transmission of electrical fluid, and that the material changes which this fluid produces at the polar points of attraction is simply an electrolytical decomposition. The principle of this metabolism is based on the theory that, as the proteid is the essential material substratum of all animal organisms; and being first made active in the vegetable compound, before its conversion into animal tissues, by the action of heat and light—the source of all energy—on elementary substances, this same constructive organic property can be set free, though now a storehouse of active regenerative energy, by the agency of the same elements which gave it birth in the organic kingdom.

But a more definite chain of analytical evidence is necessary, before a rational conception of the destructive materialistic changes is made easy.

As energy (latent) is the product of activity, and whether in this instance it is stored up by vital or chemical influence, or both, its latent power can be set free by the action of these same potent elements. But this action is purely a source of heat, which is constantly expended, both in the transformation of lifeless pabulum in the construction of living tissues, and in their natural destruction. But that which we call organized pabulum is the material deposit which had its birth and growth, and after it spent its usefulness, goes on to the period of decay. The energy displayed in its organization is principally dependent on vital force; but in its decomposition it is entirely dependent on chemical action.

Viewed in that light, chemical action—the principal force in nature—is the direct opponent of vital force, and consequently the chief physical annoyance organized bodies encounter; for no sooner has cell life begun, whether it has reached the period of its existence or not, than it is acted upon by this indomitable foe. Manifestations of this are discernible in various diseases, but more notably in diabetes, where a laxity of nervous energy is plainly observed.

From this process of reasoning we are entitled to assume that any interference with the process of regular vital motion interrupts cell proliferation; and that unless its functional activity is protected and prolonged by a continuous stimuli of nervous energy, or vital force, its existence is cut off by the execution of chemical laws.

Now, as electrolytical action is the result of chemical decomposition—in a galvanic cell—its influence must necessarily be destructive to cell life; that is, if applied to any prominent degree of stimulation, negatively speaking; for practical experience has shown that the negative electrode induces a transportation of watery fluid toward it, which must eventually disturb the conditions favorable to the process of segmentation. Recognizing this fact in the normally robust segmentation and cell proliferation, can we not discern the

important influence which this chemical resultant has upon the cell processes of lower vitality, viz.: tumor structures in general, which are dependent merely on the reflected influence of vital energy for existence, as being destructive to their abnormal nature? Indeed, the application of the galvanic current on various neoplastic growths of an erectile character, and other structural abnormalities affecting the nasal and pharyngeal regions, as well as in one instance of tumor stricture of œsophagus, has convinced me that its therapeutic properties are above reproach. Clinical evidence in other departments of medical science is not wanting in combating this assertion. But though we are never sure, even of established principles, especially in a science which is being constantly attested, as in the science of therapeutics, we are entitled to accept the latest of the previously established doctrines as the soundest, until a better one is procured. So in the present teachings of electrolysis, the display which chemical decomposition produces on low structure in general may not be recognized by some. But very often such differences are the result of a too hasty formation of opinion on a new article of treatment, or too much conservatism, or centralization of preëstablished opinions, based on the ground that they are either too impatient in determining the actual merits of an agent in advance of their time, or are above-board in attesting anything they have not already learned. However, the mode of the electrical current may not be clearly defined; but that it facilitates the absorption of interstitial deposits of lymphatic cells, is as clearly discernible as are the results of its influence on tumor structures, to me. Clinically speaking, the patient is the living exhibition of its therapeutic or surgical value. And though the regression of the growths is not as plainly observed during active treatment as after it is entirely suspended, is convincing proof of its enduring qualities.

As a clinical illustration of the actual merits of the galvanic current, based on a series of careful manipulations, let us take a typical case of fibroid growth of either the nasal or pharyngeal regions, and observingly study from day to day the effects it has upon it; that is, until from eight to fifteen applications are given of a current intensified to suit the wants of the manipulator. Beginning first with a ten minutes current application, to be increased to twenty after the eighth, an immediate congestion ensues, continuing for about twenty-four hours, and which exudes from its surface a watery secretion. Following this non-inflammatory phenomenon, a glazed and rather shrivelled appearance of the tumor is observed, but with no apparent reduction. Repetitions of this treatment, including up to the sixth, and in some instances as high as the twelfth, do not seem to change the appearance, nor alter the size of the growth. But when the proper intensification be-

comes bearable, distinct and effectual changes are noticed. But whether it is owing to the preparatory measures of the feebleness that the destructive influence of the higher current is due, I am at a loss to say. Yet, judging from the similarity of their respective dispositions, cannot but grant some value to the former, though the display of the latter is most prominent, showing visible regressive changes after each regular intensified dose. The appearance of the growth, shortly after the first sensible current introduction, showed signs of a general disintegration of the cell processes, with diminution, which increased on every application afterwards, until a complete dissolution or death of the structure occurred.

This brief description of the effects of the galvanic current on a simple fibroid naturally suggests to the inquirer the probable number of treatments necessary to its disposal; also the relative number of different pathological formations I have operated on, so as to determine on what plane of experience this novel form of treatment is to be placed.

My experience thus far has been that, as growths vary as to their natural vitality and composition, as is observed in the malignant cell variety, in comparison with the benign, the number and quality of doses will invariably vary correspondingly. Those of slow formation have greater resisting power than the cells of rapid growth; and as abnormal structures of fibroid character possess in no small degree the tenacity of the natural fibrous tissue cell—both consisting of a homogeneous mass of wavy interlacing fibres of ultimate strength and vitality—it is reasonable to suppose that a greater intensification of electrical fluid is required to disturb their functional capacity, than those constituting the myxomata, myomata, papillomata, adenomata, etc., though their conductivity may be equal. Hence the difficulty in approximating a uniform system of quantitative treatments. However, by dividing the number of applications by the number of cases operated on, we may find the average number of doses. But they do not show any relative value; for, in one instance I have in mind, a small, dense fibroid growth of vault of pharynx, over forty applications of a highly intensified current had been given before a sensible reduction of the growth occurred; whereas a feebleness current on several pharyngeal fungosities did not require, on an average, more than six.

The field of observation from which I have gleaned these facts, of the powers which this natural force wields in the decomposition and also absorption of tumor structures, may not cover a sufficient number of specified cases to warrant its general adoption, but, as a matter of preference in forty-five tabulated cases, viz.: twelve myxo-fibromata of nares, five laryngeal fibroids, eighteen cases of adenoid vegetations of posterior nasal and

pharyngeal surfaces, three angiomas and seven cases of papillary growths variously situated, but principally on sides and base of tongue and palatine arches, am fully justified in endorsing it, as an instrument in the hands of the educated of rare value; as an agent which is better adapted to suit the wants of the occasion than any surgical device at present known. Indeed, all things being considered, where a growth cannot be properly extirpated by either the crushing or cutting process without injuring important structures; or when a surgical procedure would be highly proper, but cannot be performed without doing violence to other parts, as, for instance, where the tumor is situated behind the posterior surfaces of the turbinated bodies, or in vascular growths occupying any portion of the nasal tracts where any procedure except pressure is of account—not excepting actual cauterization—nothing can accomplish so handily or so safely the removal of these growths, as the galvanic current.

HEPATIC ABSCESS; TWO CASES.

Read before the Medical Society of the District of Columbia, March 14, 1888.

BY C. V. BOARMAN, M.D.,
OF WASHINGTON, D. C.

F. W., married, aged 34 years, white, a fisherman by occupation, was seized with quite a severe attack of pneumonia, March 16th, 1887; he was sick a week or ten days when he began apparently to convalesce, and became so much better that he left the city and went down the river to one of the fishing shores of which he had charge. He remained there possibly a week or ten days, exposed to inclement weather and constant wading in the river. Whilst pursuing his occupation he was again seized with intense pain in his right side, accompanied with cough and difficult breathing; owing to the pain and great debility he returned to his home and endeavored to treat himself, not sending for me until April 27, when I found him suffering with a well marked case of pneumonia, involving the middle and lower lobes of the right lung. In a few days the pain partially disappeared, and Mr. W. appeared to be much better and left his room and came down stairs. A few days after the pain returned, of a sharp, lancinating character, accompanied with cough, rusty sputa, accelerated breathing, and high temperature.

This state of affairs went on from day to day, the pain remaining and frequently becoming unbearable; the sputa changed and became bright red in appearance, which was the case for several weeks, when he was seized with several active hæmorrhages, but prior to this his temperature fell, and I failed to use the thermometer afterwards. About May 10 he was seized with a most

severe pain in the epigastrium, shooting from the right hypochondriac region across to the left, tenderness on pressure, and a slight bulging of the parts just below the ensiform cartilage, very sensitive and hard to the touch.

He remained in this condition up to June 1st, constantly spitting blood, which appeared to give him some relief from pain, as when it would diminish or be checked by treatment the pain would become unbearable, until the hæmorrhage recurred.

About June 1st the pain became more intense, causing the man to writhe and scream out; it was located immediately over the epigastric region; the sputa became darker and mixed with pus of an intolerable fœtid odor; bowels were regular and natural in color throughout his entire illness, emaciation great, breathing quick and difficult; countenance anxious and indicative of great suffering, with little or no sleep, as the most powerful narcotics had but little effect, either in relieving pain or producing sleep, although I administered morphia in half grain doses repeatedly, both by mouth and hypodermically.

I have never, in all my professional life, seen such intense suffering. His screams could be heard on the front street at times, and continued without intermission day and night for over a week, medicine having no effect. I would not like to mention the amount and quantity of narcotics and anodynes I gave this man in various ways, for fear of being thought untruthful; but suffice it to say that I made use of every opening possible to introduce medicine into his system, to give relief; then I attacked the surface with blisters, and sprinkling morphia on the abraded surface, but without relief; everything failed until tired nature could stand it no longer, and sleep came to the sufferer, giving him temporary relief. I sustained the patient during his entire illness by administering large quantities of whisky, ammonia, and the various beef essences, together with milk, eggs, etc. He would frequently consume over a pint of whisky in one night, together with nourishment of various kinds.

The case was a most obscure one in every way to diagnosticate. I was satisfied that the lungs were seriously affected, and after a careful exploration of the chest, came to the conclusion that there was fibroid degeneration, he having had a severe attack of pneumonia.

Now in regard to the other difficulty; the intense pain and the slight bulging in the epigastric region, hard and tense to the touch, and exceedingly tender, there was a difference of opinion; I upon two or three occasions imagined I could feel fluctuation, but another physician examined it and failed to agree with me. Another hint in regard to this enlargement was, a hereditary predisposition to malignant disease of the stomach existed, the man's father, grandfather,

and other relations having died of cancer of the stomach.

In his case there existed very few symptoms of cancer, excepting the intense pain; besides, he was only 34 years of age, and did not present the peculiar cancerous hue of the skin, nor was he jaundiced.

I diagnosed the enlargement in the epigastrium as caused by the presence of an hepatic abscess, and even suggested the propriety of introducing an exploring needle into it, but was not allowed to do so.

The patient gradually grew worse from day to day. The emaciation and debility increasing, his appetite failed him, and his stomach began to rebel against the use of stimulants. About June 4th another peculiar symptom presented itself, and I was sent for in great haste, and must acknowledge that I was very much surprised upon my arrival; the man's face, neck and shoulders were puffed up out of all proportion to the rest of his body; his face was full and round, even his ears were enlarged; the arms and hands were very nearly as large again; severe paroxysms of pain would occur, and his face would then become very dark, which discoloration became permanent; his cheeks, nose, neck and ears were of a dark blue color, his extremities as cold as marble and bathed in a clammy sweat. Every symptom indicated immediate dissolution.

After the active use of stimulants and the application of heat to his extremities, and brisk rubbing, he rallied, but the swollen and discolored features remained. The swelling was emphysematous in character, and no doubt depended upon the escape of air from the broken down lung tissue.

These attacks of prostration would recur two or three times daily, but by administering stimulants, etc., he would rally, until at length he refused to take anything, nor would he allow anything to be done for him, stating that he wished to die, and that he would not suffer the torture of having his life prolonged.

He died June 10, 1887, at 10 A.M.

Post-mortem Examination.—I made the post-mortem examination at 5 P.M., June 10, assisted by Dr. James Fraser. Body pale, livid, discoloration of the dependent parts to a slight extent, rigor-mortis well marked, with no appearance of decomposition.

Upon making an incision into the abdominal walls I found but little adipose tissue; in the epigastric region, where the prominence existed, I found a large abscess of the liver, strongly adherent to the adjacent peritoneum and surrounding tissues; several smaller abscesses were dotted around the larger one. I had to rupture it to remove and elevate the liver. It was filled with a thick dark grumous substance (about a pint) and was located at the junction of the right and left

lobes. After removing the liver I made a section of the right lobe and found another large abscess, not communicating with the above one. There were four abscesses in number, and numerous smaller ones around the larger ones.

My attention was drawn to the diaphragm by its peculiar bulging appearance just below the lower lobe of the right lung, and also the presence of several small abscesses scattered over the under surface. I made an incision into it and there was a perfect gush of fluid similar to that contained in the hepatic abscesses. After sponging out all of the above I examined the lung and found it entirely broken down and in a gangrenous condition, the odor being unbearable and the substance of the lung tissue dark and semi-fluid, similar to the sputa expectorated. I did not pursue my investigations any further, owing to the late hour and bad light.

Case 2.—A lady, aged 69, had been sick for three years. Prior to this time she was comparatively well, stout, and without the history of any transmitted disease. Three years ago she began to have attacks which led me to suppose them due to the passage of gall-stones. I had examined the evacuations carefully after each attack, but could never find any calculi. The attacks increased in frequency and severity. For the past two years she had been confined to her bed. Then she began to have daily rigors and fever, accompanied with vomiting and intense pain in the epigastrium. Lately she had had one or two attacks daily. She was jaundiced and there was bile in the urine. The stools were light colored. A month prior to death she stopped complaining of pain, but the vomiting continued daily until two days before death, when it ceased. She died March 7, 1888. The necropsy showed several abscesses in the liver.

No. 1104 Maryland Ave., S. W., Washington, D. C.

MEDICAL PROGRESS.

TREATMENT OF ANÆMIA IN CHILDREN.—DR. A. JACOBI says the medicinal treatment of anæmia must fulfil the causal indications first. That which depends upon chronic gastric catarrh requires, according to circumstances, alkalies or hydrochloric acid, pepsin, bismuth. Beside the well-known subcarbonate and subnitrate, the salicylate has made many friends of late, deservedly. Pepsin and dilute hydrochloric acid are best combined; a baby of a year may take six or eight drops of the latter in six or eight ounces of water daily, or the acid may be mixed with milk according to the formula given in a previous essay. Disease of the kidneys has its own indications. The regulation of the heart's action—which, when abnormal, is the most frequent cause of habitual epistaxis,

and of gastric catarrh and hepatic congestion—is the first indication in secondary anæmia. Many a gastric catarrh will not get well without digitalis or some other cardiac tonic, and persistent nose-bleeding is apt to improve immediately after the administration of digitalis, with or without iron. Thus, in a great many cases, anæmia is “cured by digitalis.” In a similar manner digitalis can be utilized for the purpose of more competent oxygenization of the blood. When the heart is weak, and the lungs, by virtue of old pneumonic infiltrations, offer to great a resistance to an easy circulation in the pulmonary vessels, it is again digitalis (or its equivalents) which facilitates the extensive contact of the oxygen of the atmosphere with a larger number of blood-cells.

The insufficient innervation of the muscular tissue of the heart, stomach, and the rest, which is one of the most serious results of anæmia, is corrected very happily by strychnia or other preparations of nux. An infant a year old tolerates and requires one-fortieth of a grain of strychnia, or one-fifth of a minim of the fluid extract of nux, daily, for a long time in succession. These preparations may easily be combined with any other medicinal administrations.

Iron is looked upon as the sheet-anchor in anæmia. It is mostly indicated in cases of primary uncomplicated anæmia. A catarrhal stomach does not bear it well; when the stomach, however, is abnormal in consequence of the general anæmia, iron improves both the general condition and the stomach. In many of these cases the addition of bitter tonics is advisable; strychnia is perhaps preferable. Anæmia after malaria, dropsy from anæmia, and chronic nephritis, anæmia with neuralgia, anæmia with (and from) valvular diseases which do not result in local congestion,—mainly incompetency of the aortic valve,—are greatly benefited by iron. Anæmia after chronic diarrhœa requires great care in its use; in most cases it can, or ought to be, avoided. While it is very beneficial in the predisposition to hæmorrhage, it must be avoided in hæmoptisis. It is contraindicated in inflammatory fevers, for it increases pulse, arterial pressure and temperature. But in infectious fevers, such as erysipelas and diphtheria, it is very efficient. It requires good digestive powers, and, to combat anæmia only, no large doses. The total amount of iron introduced into the system in the daily food does not exceed much a single decigramme (one and one-half grains), and that contained in the blood of the adult has a total weight of three grams only. Still, it is quite possible that the iron introduced into the stomach fulfils more indications than that of supplying hæmoglobulin.

Of the preparations mostly in use, either official or otherwise, I have mostly employed dialyzed iron, a few minims several times daily, the tincture of the malate, twelve to thirty minims daily,

and the same, or somewhat larger doses, of the tinct. ferr. acet. æth. and tinct. ferr. chlor. The dry preparations are the phosphate, one to two grains three times a day, and the same doses of the carbonate (saccharated). The latter is aptly combined with proper doses of bismuth. The syrup of the iodide of iron is well tolerated by the youngest infants; as many drops as the baby has months may be given three times a day up to eight or ten drops a dose. It is well tolerated by the stomach, in which the iodine is freed from the iron and acts as an antifermentative. Besides, experience appears to confirm the theoretical inference that it proves its power as an absorbent in cases of anæmia complicated with glandular enlargements. The syrup of the hypophosphites cum ferro of the Pharmacopœia may be given in larger doses; this is the preparation which I frequently select when I mean to add the fluid extract of nux vomica. It is self-understood that I prefer the legitimate preparations of the Pharmacopœia to the wares of the agents and advertisers, “physicians’ samples” or no.

For subcutaneous administration the pyrophosphate of iron with citrate of sodium and the albuminated iron have been recommended. As anæmia is a chronic condition which requires “chronic” treatment, it is not very probable that this mode of employing the remedy is very available.

The administration of iron appears to have an indirect effect also, which is apt to do much good. As a rule, the inhalation of oxygen gas, continued for five or ten minutes, in intervals of from an hour to two hours, seems to improve sanguification and metamorphosis considerably. This wholesome action, it always seemed to me, was most perceptible while iron was administered. To admit oxygen red blood-corpuscles are required; it appears that the influence of iron on their organization and numbers renders the introduction of oxygen into the blood easier and more beneficial.

Some of the worst forms of anæmia are greatly benefited by arsenic. They are those which result from long-continued inanition and slow convalescence, in which the stomach does not suffer; from primary catarrh; from chronic malaria; from chronic tuberculosis of the lungs; from chronic glandular swellings of a malignant type, either lymphoma or sarcoma. In all of these forms it is highly useful. The doses need not be large, but may be increased slowly. One-hundredth of a grain of arsenious acid, or one drop, or one and a half of Fowler’s solution, three times a day, after meals, the latter amply diluted, are well borne for weeks, even months, without interruption, by a child of four or five years. In malaria, the remedy may be given with quinia (and iron), in other forms with strychnia (and iron); in phthisis, with digitalis.

The gradual increase of the doses of arsenic

may be effected in the following manner: A drachm of Fowler's solution is diluted with sixty drachms of water; three doses of this mixture are given daily. If the initial dose be one drop, give a teaspoonful; the next dose is a teaspoonful + one drop, the third dose a teaspoonful + two drops, and so on, until the sixty-first dose consists of a teaspoonful and sixty drops. Thus the original dose is gently and slowly doubled in twenty days.

Children bear arsenic better than adults, and very much better than senile patients. Still, even they must not take it when they are affected with gastric disorders; nor continue it when in the course of treatment conjunctivitis, cedema of the eyelids and face, or diarrhoea make their appearance.—*Archives of Pediatrics*, July, 1888.

THE TONGUE AS A GUIDE TO DIAGNOSIS OF LESIONS OF INTRA-CRANIAL VESSELS.—Examination of the tongue is usually confined to the upper surface, little or no attention being given to the under surface. DR. GILLOT asserts that this portion of the tongue often presents certain points of diagnostic significance to reward the physician for his trouble in inspecting it. It is the condition of the superficial ranine vessels, especially, which is to be studied in this inspection. In a young and healthy person the veins alone are prominent beneath the mucous membrane, but with the advance of age, or as a result of disease, these veins become dilated, tortuous, or varicose, and the venules and capillaries become visible. In many cases little dilatations, like grains of sand, may be seen on the smaller vessels. These may be so minute as to be detected only with the aid of a lens, but are ordinarily readily visible to the naked eye as little projections the size of millet-seeds. They may be few and disseminated, or may be very numerous and grouped together like a bunch of grapes. They are ordinarily situated a short distance from the tip of the tongue, on either side of the median line, or near the root of the organ. Their color varies, according to their size and the condition of the general circulation, from a bright red to purple, or almost black.

These projections, Dr. Gillot states, are true miliary aneurisms caused by a thinning of the walls of the vessel, and are analogous to the miliary aneurisms occurring on the cerebral vessels. But more than this, they are diagnostic of this condition in the vessels of the brain, or at least should raise a grave suspicion of its existence. The circulation of the tongue has very close relations with that within the cranium, the same influences which act upon one acting also upon the other, and the inspection of the under surface of the tongue furnishes as valuable an indication of the state of the cerebral circulation as does an examination of the fundus of the eye, while it

can be readily made without instruments and does not require of the physician any special training, as does the use of the ophthalmoscope.

The primary cause of these miliary aneurisms, of the tongue as well as of the brain, Dr. Gillot refers to the so-called arthritic diathesis, and he says that he has never seen these minute dilatations of the lingual vessels in any but those suffering from arthritism, a term used to denote the diathesis expressed by the manifestations of gout, rheumatism, gravel, cardiac affections, etc.

The author urges a careful inspection of the under surface of the tongue in the aged and in those presenting any lithæmic symptoms, and believes that the physician may, thereby, often derive much assistance in the diagnosis of disturbances of the cerebral circulation, and may also obtain very valuable indications for treatment, being often enabled to avert, or at least postpone, grave cerebral disorders by timely and judicious treatment.—*Medical Record*, Aug. 11, 1888.

PHYSIOLOGICAL EFFECTS OF RUSSIAN BATHS.—DR. NIKOLAI MAKOVETSKI, of Professor Manassein's clinic in St. Petersburg, has published as a graduation thesis an elaborate investigation made by him on the effect of the so-called Russian bath on nitrogenous metabolism, and on the assimilation of fat and the nitrogenous principles of food. His researches were carried out on four student friends in a condition of perfect health. The baths were given daily for five days; perspiration in a hot chamber was induced, with the usual amount of shampooing, no steam being used. Accurate analyses of the urine, etc., were made for five days before the baths, for the five days during which they lasted, and for two days subsequently. It was found that the assimilation of the nitrogenous parts of the food was diminished, the nitrogenous metabolism being increased. The loss by the lungs and skin was markedly increased, but the urine was diminished; the uric acid, too, was diminished during the days when the baths were given. The baths have the effect of strengthening the muscular and nervous systems, and of increasing secretion when there is much muscular work, especially where the food is deficient in nitrogen, when there is a large amount of nervous and mental activity, and also when there is deficient action of the secretory organs in consequence of preceding hypersecretion, or morbid conditions, such as chronic catarrh of the bronchi, stomach, intestines, or genito-urinary tract, chronic hepatic, renal, or splenic affections. In these cases, together with the baths fat and hydrocarbons are required in the food. As contra-indications, theory would lead us to include all conditions where the nitrogenous metabolism is diminished, and also those where artificially induced diminution of it appears to act prejudicially.—*Lancet*, July 28, 1888.

CATHETERIZATION OF THE URETERS IN MAN.

—In the ordinary surgical treatment of disease of the kidneys it is almost impossible to be sure of the condition of both of the organs; direct catheterism of the ureters alone allows of a correct conclusion. By the use of Nitze's cystoscope the orifices of the ureters may be brought into view, and catheterism thereof permitted. IVERSEN relates the case of a man thirty-eight years of age, who came under his care with symptoms of pyelitis, but whether double or single could not be determined. The microscope showed constant presence of pus cells and, on one occasion, a hyaline cylinder. The patient was feverish, and notwithstanding general treatment, did not improve. The high operation after Guyon was performed, and by the help of electric light both ureters were catheterized. A clear fluid flowed at intervals from the right ureter, while from the left ureter there was a continuous stream of pus, with so much impetus that it was evidently under pressure. The urine was examined with the microscope. That from the right ureter exhibited blood globules, epithelial cells, and a few casts. The urine from the left kidney contained only pus. The operation was successful, the wound healed quickly, and the urine passed normally. The condition of the patient remained the same as before the operation, but having regard to the desquamative process in the right kidney, the operation of nephrotomy would have offered no advantage to the patient, and would have been attended with danger. Iversen records this case as illustrating the advantage of catheterism of the ureters, and as a warrant for its employment on any future occasion.—*Centralblatt für Chirurgie*, April 21, 1888.

PRIMARY ACTINOMYCOSIS OF THE BRAIN IN MAN.—PROFESSOR BOLLINGER relates the first recorded case of actinomycotic tumor of the brain. The patient, a woman aged twenty-six, had, in consequence of a bad state of her teeth, fed for several months on raw meat and unboiled goat's and cow's milk. In February, 1886, was attacked with frequent vomiting; this was followed by paralysis of the right abducens muscle. The paralysis extended, and was accompanied with squinting. Several paroxysms of headache then occurred at uncertain intervals, attended with loss of consciousness, and she became comatose. After death it was found that a tumor of the size of a common nut existed in the choroid plexus, encroaching upon the third ventricle. The tumor contained a gelatinous fluid with granulation cells, and colonies of actinomycetes. Professor Bollinger had given the diagnosis of cerebral tumor.—*Centralblatt für Chirurgie*, April 7th, 1888.

ANTISEPTIC ACTION OF IODOFORM AND SOME ETHEREAL OILS.—RIEDLIN finds that iodoform

has no action on the staphylococcus aureus, but in view of the fact that the different forms of micro-organisms are differently affected by the same antiseptic agent, it will not do to draw general conclusions. On the other hand, iodoform manifests strong antiseptic powers on Koch's cholera bacillus, even in the form of vapor. His experiments with some of the ethereal oils and other substances lead him to the following conclusions:

1. Oil of turpentine in 1 per cent. emulsion quickly arrests the growth of bacteria, but has no destructive action on the spores of the anthrax-bacillus.
2. Oils of lavender, eucalyptus and rosemary are the most efficient of the other antiseptic oils, but it is impossible to make emulsions which have antiseptic properties.
3. Oil of cloves possesses some antiseptic powers; all other antiseptic oils (fennel, peppermint, juniper, as well as camphor) are of subordinate value.
4. Peru balsam is a fairly energetic antiseptic, especially against the cholera bacillus.
5. Sodium sulpho-ichthyolate in 5 per cent. watery solution has but slight anti-bacterial action.—*Centralblatt für Bacteriologie und Parasitenkunde*, No. 17, 1888.

AN ANTISEPTIC SPRAY.—DR. CARL SEILER uses the following mixture as a spray for reducing acute and subacute inflammation of the nasal mucous membrane:

| | |
|---|-----------------|
| Sodii bicarb | 3 viij. |
| Sodii bibor | 3 viij. |
| Sodii benzoate, Sodii salicylate | aa gr. xx. |
| Eucalyptol, Thymol | aa gr. x. |
| Menthol | gr. v. |
| Ol. gaultheria | gtt. vj. |
| Glycerine | 3 viiiss. |
| Alcoholis | 3 ij. |
| Aque | q. s. 16 pints. |

This formula gives a solution which is sufficiently alkaline to dissolve the thickened secretion adhering to the nasal mucous membrane, and as it is of the proper density, it is bland and un-irritating, leaving a pleasant feeling in the nose. At the same time it is antiseptic and acts as a deodorizer, being in this respect far superior to Dobell's solution or any other non-irritant deodorizer and antiseptic. As it is, however, inconvenient for many patients to have so large a quantity of solution on hand, one of our Philadelphia druggists made the solid ingredients into a compressed tablet, so that one, when dissolved in two ounces of water, will make a solution identical in its effects with the solution made after the above formula, and my patients prefer the tablets to the solution.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 25, 1888.

MISMANAGEMENT IN THE MORRIS PLAINS
ASYLUM.

"Jersey justice" has long been a synonym for swift, sure, common-sense justice. Some of it is badly needed in the management of the New Jersey State Asylum for the Insane at Morristown, otherwise known as the Morris Plains Asylum. Dr. Edward C. Booth, who for almost six years has been medical director of the Asylum, has sent his resignation to the board of managers, and for the following reasons, given in his letter of resignation:

The system is faulty, and the best results cannot be obtained under it; yet, with a competent and reasonable man, devoted to the welfare of the patients, at the head of each department, its defects might be, to a considerable extent, remedied. It is not for me to say whether I am such a person, but it is only justice to declare plainly that in my judgment the warden is not; and in this view I am confirmed by the practically unanimous opinion of those who have had an opportunity to know how he has discharged his duties. The medical department has been made so dependent upon that of the warden that any mismanagement on his part is immediately felt therein.

[It must be said that "the system" mentioned by Dr. Booth was the result of certain by-laws adopted by the managers three years ago. Strictly interpreted, these by-laws withhold from the

medical director any authority to modify the general dietary, to designate the style and quality of the patients' clothing, even in special phases of disease, to enforce the proper laundering of clothes, to determine the color, quality or texture of bed-coverings, or of ward-furnishings in general or special cases, nor to receive packages sent by friends of the patients, and to decide what shall be given to and what withheld from the patients.]

Dr. Booth continues: I sought to correct the evils that arose by exercising the power given to me, and by defending the medical department from the warden's repeated encroachments. Thus, when the regular diet prescribed and furnished by him proved unfit, the physicians resorted freely to their power to order special diet, taking pains to cause as little inconvenience as possible. When these orders were disobeyed, as they continually were, my only resource was to complain to your board.

A public investigation was now ordered, through no act of Dr. Booth, and he disclosed the neglects that affected the comfort and treatment of the patients. In regard to the investigation ordered by the State Legislature, he says: It was my hope that the managers, who alone have the power to introduce reforms, would assume an impartial attitude. It was, therefore, a painful surprise to me to find that before hearing the evidence several of them had openly taken sides with the warden, resenting the offer of evidence of his mismanagement; and that the exposure before the Legislative Committee of abuses which it was impossible to conceal truthfully was regarded by some of the managers as an attack upon themselves. The discharge of one of my assistants, Dr. McFarlane, a physician of high character and promise, for no offense other than in zealous service in the investigation ordered by the Legislature, including a call made by him at my request upon one of the employés of the warden's department, to procure her statement, a discharge made without consulting me, and, so far as I can learn, without consulting any officer of the asylum except the warden, together with the fact that it seems to be the settled policy of the managers and the warden to inflict the penalty of summary dismissal upon any employé who should testify to abuses, destroys all presumption of a serious determination to reform the management.

Dr. Booth thus adds his name to a long roll of physicians that have for similar causes resigned their places in the Morris Plains Asylum. It seems to be in accordance with "the Genius of American Institutions," which some of our contemporaries are so fond of writing of, to select hospital wardens from a list of political workers, without regard to their sense or efficiency, or fitness for such places. Our legislators and executive officers, and the public, do not seem to know nor care to find out, in the majority of cases, what kind of person should be chosen to fill certain offices. An example of this is seen in the vote-baiting promise of a certain gubernatorial candidate to appoint, in case of his election, a railway commission composed of one farmer, one railway conductor or locomotive engineer, and one lawyer. It certainly seems strange that an asylum board, of which the late Dr. T. R. Varick was a member, could ever have adopted such by-laws as those in force at the Morris Plains Asylum. The board should have completed the farce by making the warden medical director, and restricting the duties and powers of the latter to those of a book-keeper. The trouble with the majority of hospital boards seems to be that they learn nothing from their own experience, and nothing from the accumulated experience of other boards. Hospitals for the insane cannot be conducted on the plan of a livery stable. Of course matters might be, in a certain way, simplified by assigning a certain suit of clothing and certain diet to a particular cell, room, or ward, just as there might be a rule in a hospital to put a Hamilton long splint on each patient that might occupy a particular bed, whether he have pneumonia, a fractured skull, or a broken femur; and the claim might be made that if the patient was not benefited thereby it was his misfortune. But hospitals are for the benefit of patients, not for the glory and convenience of wardens.

THE FUNCTIONS OF THE SPHENOID.

The possible functions of the sphenoid bone are discussed, and a series of experiments detailed, in an interesting paper by MR. J. A. MALONEY, in the *N. Y. Medical Journal*. In making tests to ascertain the conditions of those with impaired hearing, preparatory to applying an otophone in the case, Mr. Maloney was impressed with a sin-

gular effect in some cases of great hardness of hearing when he had reason to suspect partial ankylosis of the ossicula, or adhesions of the same when resulting from catarrh of the middle ear. It was noticed that a very low voice could be heard when the ear-piece of the otophone was placed upon that portion of the temporal bone that joins the great wings of the sphenoid, while a comparatively loud voice could not be heard when the otophone was placed over the external auditory meatus. The experiments made for determining the cause of this led to the discovery of some curious facts in regard to the sphenoid.

It was found that the impact-wave through the sphenoid was much more forcible than through the frontal, occipital or ethmoid bones. The sphenoid was made to communicate its vibrations to the diaphragm of a microphone in electric current with a telephone receiver; the drawing of a very fine silk thread, held at one end, over a free wing of the bone, could be heard in the receiving telephone. Gentle breathing against the free wing of the bone was heard in the receiver. Breathing with impact of air at the point at which the optic nerve and the internal carotid artery pass through was also heard. The only point of the temporal bone that gave like results was at the jugular fossa.

From these experiments Mr. Maloney thinks it probable that the following phenomena may be traced to the sphenoid and temporal bones as factors in their development:

1. *Localization of Sound*.—The direct or maximum result in localization is probably due to aerial conduction through the meatus auditorius externus. The indirect or bone conduction being through the sphenoid (from one wing to the other, and thence to the internal ear upon the opposite side), thus probably gives a maximum and a minimum sensation by which the mental act of localization of sound is accomplished.

2. *Tinnitus Aurium*.—Owing to the extreme susceptibility of the sphenoid to conduct minute sound vibrations, may not the pumping sounds so frequently mentioned in this form of "noise in the head" be due to aneurism or some abnormal condition increasing in intensity the flow of blood through the internal carotid, ophthalmic, or great meningeal arteries in their passage through this bone, or to the same factors through the jugular, in its relation to the temporal bone?

He has produced the "singing sounds" by getting a very loose contact in a Blake telephone transmitter, the contacts of which would be, for the purpose, analogous to the articulations of the malleus and incus; whence he concludes that "singing sounds" are due to a slight dislocation of the melleo-incudal joint placed in vibration by some subjective cause, and continued by reason of the membrani tympani acting as a retractile spring, thus producing the same effect as the "Neff hammer," or make-and-break upon the induction-coil.

In regard to autophonia, remembering the theories of Gustav Brunner, that alterations in the hearing of one's own voice are phenomena of resonance, a vibration of air in the middle ear shut in by closure of the tubes, of Gruber, that autophonia is a "consonance phenomenon, caused by swelling of the mucous membrane of the middle ear," and of Sexton, that the "phenomena of autophonia are due to a disturbance of the equilibrium of tension in the transmitting mechanism of the ear," Mr. Maloney asks: When the Eustachian tubes are closed entirely (by which equal pressure upon each side of the membrana is prevented), may not the strong vibrations of air set up in the larynx and pharynx (the mouth cavity being known as a powerful resonator) be sent to the seat of audition, through the agency of the sphenoid bone, particularly at the part situated between the ethmoid and occipital bones?

May not color audition, asks Mr. Maloney, in view of the readiness with which the sphenoid bone takes up and delivers vibrations, be due to mechanical stimulation of the optic nerve by impingement of the same upon the sphenoid bone in its passage through the optic foramen?

EDITORIAL NOTES.

PRIMARY AMPUTATION OF THE LEG UN-
DRESSED FOR EIGHT DAYS.—What a good con-
stitution, country atmosphere, and "luck" can
do in a case of severe injury is shown by the fol-
lowing case, recorded by Dr. T. J. HURTON, of
Fergus Falls, Minn., in the *Medical Record*: A
family had recently arrived from the mountains
of Norway, where life is chiefly pastoral, and both
broad acres and farm machinery are unknown.
The sickle of a mower at work seemed to fasci-
nate a member of this family, a boy aged 9. He

followed it up and kept kicking at it with his feet—first one foot, then the other. Either failing to keep step, or because the unexpected must hap-
pen, the sickle amputated his left leg at about the union of the middle and lower third. It made a clean cut, leaving a long ovate stump. A by-
stander stated that upon receiving the injury the boy hopped rapidly in a bee-line about four rods, upon the sound member, then suddenly assumed the dorsal decubitus, raising his stump straight up in the air. The family was both ignorant and poor—did not even know that surgical aid could be obtained at the public expense, and so it hap-
pened I was not called until eight days had elapsed, and nothing had been done for the boy save that an old woman had tied a rag around the stump. A grayish pellicle covered the stump. There was no swelling, gangrene, fetor or sepsis. There was great weakness—that was all. I re-
mained with him twenty-four hours, administering wine, quinine, and concentrated food at short intervals. I then reamputated. He made a speedy recovery, being out-doors within a week.

"NO CODE OF ETHICS IN ENGLAND."—Says the *London Lancet*: We, understand that at the last meeting of the Royal College of Physicians the Censors' Board reported upon some recent cases of alleged infringement of professional ethics. In two cases explanations satisfactory to the Board had been given, but in a third, and apparently more serious case, a decision has not yet been arrived at. It appears that the Censors' Board received information of consultations being held by certain leading Fellows of the College—gentlemen who have held some of its highest offices—with a practitioner in the West-end alleged to be a homœopath. The Censors' Board, on applying to the gentlemen, were informed that they were not aware that the practitioner in question was a homœopath, that his practice did not conform to homœopathic principles, and, indeed, as he himself had declared in response to a question from one of the Fellows, that he was not a homœopath, but an "eclectic" physician. We forbear comment upon a matter that is still *sub judice*. Nevertheless, it may be well to recall a memorable resolution of the College, passed on December 27, 1881, after full debate: "While the College has no desire to fetter the opinions of its members in reference to any theories they may

see fit to adopt in the practice of medicine, it nevertheless thinks it desirable to express its opinion that the assumption or acceptance by members of the profession of designations implying the adoption of special modes of treatment is opposed to those principles of the freedom and dignity of the profession which should govern the relations of its members to each other and to the public. The College, therefore, expects that all its Fellows, Members and Licentiates will uphold these principles by discountenancing those who trade upon such designations."

THE NEW YORK POST-GRADUATE SCHOOL.—During the winter session of 1887-1888 more than 335 different physicians attended the courses in the New York Post-Graduate Medical School and Hospital, an increase of more than 60 per cent. over last year. In the Hospital Department, about 400 operations were performed, all of major importance. To all of these the matriculates had access, as the hospital is used solely as a means of clinical instruction. This increase in the matriculation list has necessitated both larger clinical space and hospital accommodations, so that a new clinical amphitheatre has been erected, and will be used for the first time at the opening of the winter session, September 17, 1888. A new and commodious laboratory has been erected and furnished with the latest apparatus for the study of normal and pathological tissues. The nose and throat clinical room has also been enlarged. Professors Abraham Jacobi, Robert F. Weir, Joseph E. Winters, L. Bolton Bangs and Peter A. Callan, have been appointed to the Faculty. The session of 1888-1889 promises to be the most prosperous ever held.

AMATEUR TREATMENT OF EPILEPSY.—It is not often that amateur doctors get the punishment they deserve for officious, foolish and dangerous meddling. The newspapers have recently mentioned a case in which one got his just deserts. He had tried to stop an epileptic fit by pouring cold water into the mouth and upon the neck of the patient. After a short struggle the sufferer sank back apparently dead, when the would-be doctor became alarmed and placed his ear at the mouth of the patient. This seemed to revive the patient, for he caught the ear in his teeth and chewed it until, the record says, "its beauty had vanished." The epileptic was arrested on a

charge of mayhem, but was discharged on the ground that he was not responsible for what he might have done in a fit. Would the amateur doctor have deserved nothing in the way of punishment had the patient been suffocated by the silly interference?

A FRENCH SEWAGE-DISPOSAL COMMISSION has recently visited Berlin to inquire into and report upon the sewerage of Berlin, and its works of sewage-disposal. Referring to this visit Herr Stadtrath Marggraff says: "The gentlemen composing the commission referred to, with Dr. Cornil at their head, expressed themselves on the whole very satisfied with all the results they saw achieved by our irrigation system, eulogized in particular the general cleanliness everywhere visible; while they were most favorably impressed, not merely with the good appearance of the crops grown, but above all with the excessively clear and undisturbed character of the effluent obtained.

QUACKS PREFERRED.—The French medical press gives a curious instance of preference for quacks. A provincial magistrate received complaints that a certain person was practicing medicine illegally. The quack admitted that he practiced, but produced a diploma showing that he was Doctor of Medicine of the Faculty of Paris. He explained that while he was unsuccessful as a legitimate practitioner, as soon as he concealed the fact that he was a graduate, and posed as a quack, his fame began to spread, his income grew, and he saved and invested a considerable sum of money. He begged the magistrate to keep his secret, being sure that if it was known that he was a qualified man he would lose all his practice.

"RECOMMENDED BY ALL PHYSICIANS."—An English antiquarian has been delving among old newspaper files and has discovered what he says is the first commercial advertisement ever printed in a newspaper. It appeared in the *Mercurius Politicus*, of London, dated September 30, 1658. It runs as follows: "That Excellent and by all Physitians approved China Drink called by all the Chineans Tcha, by other nations Tay alias Tee, is sold at the Sultanness Head Cophee House, in Sweeting's Rents, by the Royal Exchange, London."

M. MAREY, Director of the physiological station of Fonds-du-Princes, has been voted 12,000

francs by the municipal council of Paris, for carrying out physiological studies having in view a better physical education of man and an amelioration of the conditions of his work.

ILLEGAL PRACTITIONERS IN PARIS.—A charlatan of the rue du Bac, Paris, who "cured all incurable diseases," has been fined \$400 for practicing medicine illegally. Another illegal practitioner was sentenced, on the same day, to three months' imprisonment.

PROFESSOR WALDEYER, of the University of Berlin, will hereafter confine his teaching to Anatomy proper, naked-eye and microscopical. Professor Hertwig, who holds the Second Professorship of Anatomy, will teach Embryology.

PETREFACTION OF THE CARUNCULA LACHRYMALIS is recorded by DR. DOLSHENKOFF in a Russian journal. When the conjunctiva was removed from the tumor a prismatic structure, 11 by 9 mm., was found.

MEDICAL ANTISEPSIS.—The municipal council of Paris has voted in favor of the organization of the service of Professor Grancher for the application of medical antiseptics at the Hospital for Diseases of Children.

DR. LASHKEWITSCH, late Professor of internal medicine in the University of Charkow, left 50,000 francs for the founding of a laboratory of experimental pathology in connection with the medical clinic.

DR. SAHLI has been appointed Professor and Director of the Medical Clinic of Berne, Professor Lichtheim having gone to Königsberg.

THE WISCONSIN BOARD OF PHARMACY has recently convicted and fined two parties \$50 each for violating the law.

A BACTERIOLOGICAL LABORATORY, under the charge of Professor Baumgarten, is to be erected in Königsberg.

THE IOWA PHARMACY LAW is being enforced. Two grocers have been fined \$50 each for selling Paris green.

DR. W. WAGNER RITTER has qualified as Privat-docent in Mental Diseases in Vienna.

DR. SALVATORE TOMMASI, for many years one of the editors of *Il Morgagni*, died on July 13.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting March 7, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. JOS. TABER JOHNSON presented the specimen and read the history of a case of

A LARGE SUPPURATING ABDOMINAL CYST.

(See p. 125, THE JOURNAL, July 28.)

DR. JOHNSON also exhibited

AN OVARIAN CYST,

sent him by Dr. Sale, of Aberdeen, Miss.

History.—The specimen had been removed from a young girl, aged 16, who had been a great sufferer during the menstrual periods for the past year. When not menstruating she was of a lovely disposition, but during the flow she would act strangely and was at times so very violent, almost insane, that she was recently ordered out of her boarding house. After considerable persuasion from her mother and family physician she consented to an operation. March 2d, he removed a cyst weighing about 8 pounds, without any difficulty. On the fifth day she was rolling about the bed and was very comfortable; the pulse had not been more than 80, and her temperature never above 99.4°; and she had not had any opiates.

Dr. C. T. Caldwell presented the specimen and read the history of a case of *Myofibroma of the Uterus*.

Dr. D. S. Lamb presented *A Placenta with Three Cords and Two Sacs*.

Stated Meeting, March 21, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. P. J. MURPHY presented the specimen and read the history of a case of

HYSTERECTOMY FOR MYOFIBROMA.

(See p. 197, THE JOURNAL, Aug. 11.)

THE PRESIDENT thought the Society should be congratulated on the number of important operations that had been performed by its members.

DR. BERMANN: Is it not a genuine hyperplasia of the uterus? The microscopic examination would easily determine whether it is or not.

DR. MURPHY: The first diagnosis was a fibrocyst. The small fibrous growths in the neighborhood of the large one determined the nature of the growth. If it were simply hyperplasia then there would be simply a proliferation of the uterine tissue. Examination at the Army Medical

Museum showed the diagnosis to be myofibroma.

DR. BERMANN: In support of the idea of its being a genuine hypertrophy or hyperplasia of the uterus the diagnosis of myofibroma does not exclude the other. It contains the cavity of the uterus in its body. Its cellular construction is similar to that of the uterus; and if it is covered by the peritoneum—which fact a microscopical examination will easily determine—in his mind there could not be a doubt that we had before us a very rare thing of a genuine hyperplasia of the uterus. The existence of the fibrous nodules did not seem to exclude the possibility of his diagnosis.

DR. BUSEY: The microscopical examination of the tumor has shown it to be a myofibroma. The gentlemen are misusing terms, hence the apparent difference of opinion. It is a growth of both tissues. Dr. Bermann was right when he stated that this was a growth of the true uterine structure. There may be separate and distinct fibrous nodules. Dr. Murphy was to be congratulated upon the success of the operation. He had tried electricity, but the growth had continued to increase. We have had so many reports that have promised so much from electricity as a therapeutic agent in such growths that it will be well to have a distinct understanding as to the method of application. He is prepared for any results from the use of electricity but confessed that he was a little incredulous of the marvellous cures reported by its advocates. He could understand how electrolysis might do some good, but he could not see the efficacy of a current when both electrodes were separated from the growth by considerable distance and intervening tissues.

DR. MURPHY had passed the galvanic current from a 12-cell McIntosh battery through the tumor—the sponge electrodes being placed on either side of the abdominal wall.

DR. REYBURN: Because electricity fails in one case it does not follow that it is not good in others. If the current is measured it can be given with safety. He gave the history of a case of fibroid tumor of the uterus that had been greatly benefited by six applications, by applying one electrode to the abdominal surface and the other to the thigh. After these applications she measured nearly two inches less around the abdomen over the tumor. She had been having severe hæmorrhages every two or three weeks and was nearly exhausted. He gave from 50 to 60 milliamperes, and on one occasion gave 70. He produced a severe eschar on the thigh. He thought Dr. Murphy should have used larger electrodes. Metal electrodes large enough to cover the whole abdomen are best. On one occasion he accidentally reversed the current but it did not do any harm. Electricity in fibroid tumors offers some hope. He thought it scarcely justifiable nowadays to resort to the knife. Electricity offers by far the best method of treatment. In passing strong currents we get a certain

amount of decomposition of the fluids and contraction of the tumor.

DR. S. O. RICHEY was not especially interested in such cases as that from which the specimen was removed, but was interested somewhat in the use and effect of electricity. He thought Dr. Reyburn's proposition in regard to the use of the galvanometer a proper one, but he had not heard him speak of a more important factor—the direction of the current. The proper way to secure electrolysis is with the negative pole near the part to be atrophied, and the positive near the origin of the nerve supply, passing the current in the course of the nerves and securing disintegration. A current of limited power, used for a long time, has much the effect of a strong one used for a proportionately short one, and is safer.

DR. BUSEY: Was seeking information and was not opposed to electricity. Would Dr. Reyburn tell him how he knew that the current passed through the tumor. He talks about the milliamperè as if it were a therapeutic agent. He understood that it simply measured the dose.

DR. REYBURN: Of course the meter is to measure the dosage. Batteries vary. He also calculated the resistance. He had not punctured the uterus, but had applied the electrodes to the abdominal walls on either side of the tumor. The index shows that the current is passing and one can see the powerful contractions of the tumor.

DR. BUSEY: But Dr. Reyburn does not prove that he passes the current through the tumor. He wanted to know the direction of the current. If he had put one electrode into the uterus he could see how the current could pass through the tumor, but not when one electrode was applied to the abdominal wall and the other to the thigh. If the abdomen measured two inches less in the case reported by Dr. Reyburn, after six applications of electricity there was nothing surprising in it, as there may have been a loss of adipose tissue, the places of measurement may have been different, or the intestines may have been distended with gas at the first examination and not at the second. Such statements are too inaccurate for him to accept.

DR. MACARDLE: Had under observation a case similar to that reported to-night. A consultation was held to determine the advisability of removing the tumor, but it was decided to try electricity. He had since then been using a Wait's battery, with Apostoli's large electrode to the abdomen and the negative pole to the uterine sound passed into the cervix. The applications were made every other day. How long would Dr. Reyburn advise him to use the electricity to determine its efficacy?

DR. REYBURN: Hysterectomy for fibroid tumors is unfavorable and unjustifiable unless the woman's life is in immediate danger. The electricity should be faithfully tried for several months.

DR. RICHEY: Would suggest to Dr. MacArdle, that the negative pole passed through a sound to contact with the cervix—thus insulated to the point of contact—and the positive pole placed over the spinal lumbar region, might give satisfactory effects in his case. A needle at the negative pole plunged into the body of the growth would be more reliable. We must in this, as in other cases, seek immediate contact with the tissue to be influenced. To pass a current from the head to the feet, with a view of influencing an abdominal tumor, would probably not be satisfactory in its results. Those who are in doubt of the influence of galvanism might first observe its effects upon superficial growths. An effort must be made to secure immediate contact with the tissues to be influenced. How are the eschars produced by Dr. Reyburn progressing? They are often very intractable, and resist every method to control them, except a reversal of the current.

DR. BERMANN: In using the electrolytic action of the current it does not matter much, according to Apostoli, Engelmann and others, which pole is used. In strongly vascularized tumors, such as fibro-sarcomata, Engelmann advises the application of the positive pole to the cavity or neck of the uterus. As the eschar naturally produced by such strong currents as are necessary for the reduction of such tumors, varying from 60 to 250 milliampères, might produce a hæmorrhage which would be stopped by the application of the positive pole. In nervous affections Erb expressly states that it does not seem to matter much whether the positive or negative currents are ascending or descending with the nerve-current. It would be very dangerous to apply either pole at the central nervous system, as advised by Dr. Richey, for reducing tumors, as the dangers and risks would be more than any one would be willing to assume the responsibility for.

DR. RICHEY: Electrolysis takes place only at the negative pole. He deplored the use of very strong currents in the beginning of his remarks. The proper direction of the current is still a disputed question.

The specimen was referred to the Committee on Microscopy, who reported that the tumor was a myofibroma.

Suffolk District Medical Society.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, May 9, 1888.

ALBERT N. BLODGETT, M. D., SECRETARY.

(Concluded from page 248.)

DR. HAMILTON OSGOOD read a paper on

INVETERATE HEADACHE.

The common, the non-perilous ailments of our

patients are apt to be superficially treated. Headache is a plague to an indolent medical man. He regards it as of little moment, and treats it accordingly. To the patient, however, the ailment is a serious matter, depriving him as it does of power in practical life, of enjoyment of vacation, of comfort at home. It entails annoyance to others, for it renders the sufferer irritable, unjust and uncompanionable. If he be not relieved when he might be, the physician naturally deserves blame for an evil of wide extent.

Inveterate headache may be relieved by one or more of the scores of internal and external remedies, but these merely wither the fruit without touching the root of the evil. Indeed, the management of this affection is so empirical that it recalls Voltaire's reflection upon the practice of medicine, which he said consisted in: "Putting medicines, of which we know little, into a body of which we know nothing." No sooner does a form of treatment promise success in a patient, whose look and daily history indicate that at last the headaches have yielded, when, like a thunder-clap, a new series of attack appears, and the course adopted and heretofore efficient becomes inert.

As an illustration: A lady, single, aged fifty-five, has suffered from intense headache since her youth. She has had every variety of treatment; has consulted many physicians. Remedies which on one occasion relieved her failed utterly on another. Change of climate was extremely beneficial during one year. On returning to the same locality the following year her headache was incessant. She is known among her friends as a victim of pain, and has had every reason to feel profound discouragement. My first professional interview with her was during an attack of headache, in which, as is usual with her at such times, she seemed nearly unconscious from suffering. I was merely asked to relieve her by a subcutaneous injection of morphia, which I did, using one-half grain. Subsequently I was requested to take charge of the case. A careful examination gave me the following information: The patient was well nourished; appetite generally good; bowels in normal condition; her face showed the exhaustion caused by chronic pain; the menstrual periods (now passed) had always been regular, and, save that a headache was apt to follow them, free from annoyance of any nature. Her headache occasionally extended to the left side of the cranium, but was almost wholly confined to the right side, and never took the form of clavus. The onset of pain, however, was not peculiar to the menstrual epoch, but occurred irregularly at other times, and so frequently that the patient was never sure of being able to keep any engagement whatever. "Pain is the prayer of the nerve for healthy blood," says Romberg.¹ During the thirty

¹ Nervenkrankheiten.

years of her experience of pain this lady has taken every sort of tonic and every variety of blood-making food. The wise adage, "Eat when you are hungry, but not so long as you are hungry," has been carefully observed, as have also the ordinary laws of health.

Sudden changes of weather have always given her great discomfort. This may be explained by Wright's² computation to the effect that a change of one inch in the barometer increases or decreases the atmospheric pressure which the body of an average man sustains—by 1,080 pounds. "The results in periods of great weather fluctuations are headaches and even apoplexy." In my patient it is easy to imagine the painful effect of the abrupt oscillations in the circulation which would occur under such conditions.

The headaches I found to be invariably preceded by flushing of the right ear, the color deepening, as the pain appeared, to a livid hue. A little later the left ear became flushed, but never took on the darker color of the right. This anomaly in the circulation led me to examine the heart. I found it free from organic lesion, but the first sound was weaker than the second, and both sounds, as well as the character of the heart's impulse, indicated lack of power in the cardiac muscle. This explained the temperature of the hands, which were invariably cold, and caused me to suspect that the lividity of the right ear during an attack of pain, and the deeper co-existing color of the right face, as compared with that of the left, were due to weak heart and habitual lack of vaso-motor energy in the blood vessels of the right side of the head. This, I argued, was a logical accompaniment of the persistence of pain in this side, and probably showed a chronic dilatation, or at any rate weakness in the walls of the vessels of the right side, and which became apparent whenever the irritation of pain reflexively lessened the energy of the heart. During an attack, I further argued, these vessels probably dilated, and since "vessels of the brain are not supported by pressure of surrounding elastic muscles, and have, moreover, a less powerful construction than have blood vessels elsewhere,"³ this temporary dilation of weakened vessels created a local obstacle to the onward flow of the blood, and hence the increasing deeper hue of the visible tissues of this as compared with the left side of the head and face.

The stagnation of the blood-current is naturally followed by an accumulation of carbonic acid, and in consequence by an exacerbation of pain. A good illustration of this local condition of the circulation may be seen in the purple outlines of the blood-vessels of a drunkard's nose. Here the vaso-motor energy is permanently deadened by alcohol, and we see the constant presence

of carbonic acid. In the patient in question, however, the local impurity of blood disappears as soon as the pain and its reflex effects upon the heart cease.

In behalf of my theory allow me to digress for a moment in order to relate the most striking instance of neurotic reflex which has ever come to my notice. Some years ago I was called to a lady who was suffering from severe pain in the right ear. I had frequently relieved this ear of large masses of wax, and the patient rightly suspecting the cause of the pain, had vainly tried to clear the ear in the usual way. When I reached her house the lady told me she was also in great discomfort from a delayed menstrual period now eight days overdue. It required fifteen minutes of time and copious injections of warm water to free the patient's ear from a very large mass of cerumen. The relief was immense, and, moreover, before I left the house the *period had appeared*.

It is not strange, then, that great pain in the head reflexively will lessen the power of the heart, and I feel very confident of the correctness of my argument in the case in question. After writing the foregoing, I happened to find in Anstie's clever book on neuralgia the following remark: "Muscular viscera which are composed of unstriped fibre, like the intestines, or of a mixture of striped and unstriped, like the heart, are probably very liable to a secondary paralytic influence from certain special neuralgia."

Still I was no nearer to a discovery of the original *cause* of the headaches. As to the quality of the pain I may safely repeat Begbie's words in relation to a similar case quoted by Day, in his book on headache: "It was not nervous, nor hysterical; it was not inflammatory, nor congestive; it was not anæmic; it was not dyspeptic; it was not of a rheumatic, nor of neuralgic character; it was not periostitic; it was not periodic." Finally, something in the general look of the patient, nothing positive, there being no especial symptom which could be named, suggested gout. The patient denied all knowledge of any case of this ailment in her family, but a careful inquiry into the family history revealed the fact that in several of her ancestors gout had existed. I at once determined to test this possibility, and took with me a quantity of the patient's urine for examination.

Previously, however, I ordered tincture of strophanthus in doses of four drops, which I subsequently increased to eight drops, three times daily. I may say here that even before I adopted any other form of treatment, so soon as the cardiac tonic began to show its effect in a relatively stronger first sound of the heart, the headaches became less intense in character, the discoloration of the right ear appeared less frequently, and when it did appear, was far lighter in hue. This

² On Headache.

³ Wright on Headache.

was the first proof that the headaches were partially due to weak heart.

In examining the urine, I did not make a quantitative analysis for the uric acid present, but did find the fluid intensely and unusually acid and that the specific gravity was 1.034. This, in the absence of albumen and sugar, convinced me in my suspicion of the existence in the patient of a gouty tendency.

[In a lecture upon gout, Trousseau relates a case of headache which puzzled him extremely. This was in the early days of his practice. After a long period of doubt and insufficient treatment, the case was cleared up by a frank onset of gout, in reference to which Trousseau makes the interesting remark: "I did not then know that *gout* and *migraine* are sisters."—*Clinique Médicale*, Vol. III.]

Prescribing the bi-carbonate of soda in scruple doses, three times daily, the urine soon became moderately acid, the specific gravity fell to 1.024 and during the following six months not only did the headaches become very infrequent, but when they appeared the pain, save in two instances, was not acute.

Meanwhile, under alternate use of the tinctures of strophanthus and digitalis, the circulation of my patient had improved to such a degree that the hands and feet became habitually warm, her face lost its expression of exhaustion, her eyes brightened and she looked years younger than when I first saw her. This change corresponded with a steadily increasing power in the first sound of the heart which was now stronger than the second sound. During this interval I substituted Buffalo lithia water (spring No. 2) for the soda, and the patient became more comfortable than she had been for several years, only two headaches of moment occurring during these six months.

This period of truce was then suddenly interrupted by onset after onset of intense headache, which, however, to my great relief, I soon found had their origin in the suppurating pulp of a molar tooth, so that they did not disturb my diagnosis of gouty headache. The tooth was soon relieved but the cranial pain held on. Antipyrin quieted the headache but caused unbearable nausea.

Just then appeared in *La Semaine Médicale*, Germain Secé's recommendation to give with antipyrin an equal bulk of this bi-carbonate of soda as a certain means of avoiding nausea. This proved a success and disposed of all tendency to nausea in this case and several other cases. In the patient in question, however, the drug soon became inert. The caffeine, bromo-caffeine, likewise guarana, of which caffeine is the active principle, were never of any use to her. Cannabis indica is perfectly negative and the patient is so annoyingly familiar with every other known remedy for headache and the inefficacy of all of these, that in her paroxysms

of pain you will not wonder, notwithstanding I have a strong prejudice against the drug, that I have occasionally resorted to morphia, which, of course, relieves the pain, yet is invariably followed by severe vomiting. I did not try antifebrine because by this time had lost faith in remedies of that sort for this patient.

When she came out of this storm I found that the former effectual treatment by cardiac tonics and alkalies had utterly lost its power. This fact, together with absence of relief from medicines which benefit other forms of headache, still further convinced me that gout and not neuralgia was the root of the ailment, and I finally resorted to absolutely anti-arthritic treatment—wine of colchicum and iodide of potassium—the diet being carefully regulated. That I did not do so before, in view of my diagnosis, was due to my hope that the cardiac tonic and alkalies would prove effectual, as indeed they decidedly did for six months. Almost at once after beginning to take the remedies for gout the patient experienced a heretofore unknown sense of relief. Time is needed to prove that she has been wholly relieved of her suffering, but she is already in a condition of comfort to which she has long been a stranger, and although at times she is conscious of pain it is so mild in character she does not consider it of moment, and I hope it is due to nothing more than nerve-memory. Twice weekly, I give her a strong secondary galvanic current. This is acting well as a nerve tonic and the patient is more vigorous in every sense. She is taking 18 drops of the wine of colchicum root and 8 grains of the potash, three times daily.

A prominent feature in the symptoms of this case has been the weak heart, careful stimulation of which contributed largely to the well-being of my patient during the six months of almost entire freedom from severe pain.

This point merits especial mention. I believe we neglect the heart in many cases in which if this organ were stimulated patients would sooner reach a condition of comfort. In the patient in question, notwithstanding she has been a victim of pain for thirty years, during which she has received such a variety of treatment that it is difficult to name a remedy with which she is not familiar, and in spite of having passed through the hands of very many physicians, her heart has never before been carefully examined nor directly treated.

DR. E. G. CUTLER said: I was much interested in the first case that Dr. Osgood read. After he spoke to me about the case, in looking for some cases I found that I had nothing of my own, and I found in the library, in the last report of St. Bartholomew's Hospital, a collection of fourteen cases not unlike those of Dr. Osgood. It is a paper written subsequent to another published several years ago, of cases in which was found

hue, coagulable, and about one-half pint in quantity. Dr. Foster subsequently saw the case, and recommended the exhibition *per os* of acetate of lead and gallic acid, but the change in treatment was followed by no alteration in the symptoms, the discharge of bloody fluid continuing, and the patient growing rapidly weaker. Three days after the beginning of the discharge she complained of nausea, followed by vomiting, spontaneously, and upon taking food. The vomiting soon assumed an incoercible type, and the stomach refused to tolerate either fluids or solids. In each of her former pregnancies morning sickness was notably absent. The vomit consisted successively of food, glairy mucus, bile, and finally traces of blood. The violent efforts at retching were especially distressing, and the consequent loss of sleep rendered the patient nervous and irritable.

August 12th I was invited to see the case in consultation with Dr. Foster. The patient was greatly emaciated, weak, and the slightest muscular exertion was sufficient to excite a paroxysm of vomiting and retching. Temperature, 101° F.; pulse 120, small and compressible. Abdominal palpation revealed pregnancy advanced to about the twentieth week, the foetus presenting by the vertex. Foetal heart-tones, normal as to force and frequency. Intermittent uterine contractions were unusually forcible and frequent, but were painless. Vaginal exploration showed the head, completely filling out the lower uterine segment, at the inlet, the vaginal portion of relatively normal form, consistence and appearance. The tear was very slight, scarcely noticeable; no ectropion nor erosions. The cervical canal was closed, but readily passable by the finger up to the head, covered by the membranes, a distance of 3.5 centimetres. The uterine discharge was sero-sanguinolent, occasionally containing shreds of tissue, and without odor. The urine was normal.

Diagnosis.—Placenta prævia, to which the sudden, painless character of the bloody discharges and the absence of any apparent, adequate cause pointed, could be definitively excluded by the relation of the head to the lower uterine segment already mentioned.

Premature separation of the normally implanted after-birth was capable of highly probable exclusion, since the foetal heart-tones were normal as to force and frequency, and the characters of the uterine tumor were natural. The subsequent examination of the placenta demonstrated this opinion to have been correct.

Threatened abortion from rupture of the amnion was eliminated by the entire absence of expulsive uterine contractions and of the cervical changes, softening and dilatation, notwithstanding the persistence of the discharge for longer than one week. During the progress of the abortion artificially induced at a later period, the amnion was

observed to be intact, and upon subsequent examination only a single aperture, through which the foetus passed, was discovered.

No evidence of the hæmorrhagic diathesis could be gathered, neither from the symptoms nor the history of the case. The presence of some inflammatory affection of the endometrium was thus rendered highly probable by the exclusion of all other chief factors capable of producing the symptoms. But positive data supporting this view were not wanting. The history of the case established the fact of an endometritis corporis of long standing, and active immediately before conception. The discharges were sero-sanguinolent, with minute blood-clots of various ages, and sometimes shreds of decidua. Then the irregular, intermittent character of these discharges favored this opinion. The type of inflammation seemed to be chronic catarrhal, and the diagnosis of hydrorrhœa gravidarum (Chassinat, C. Braun, C. Hennig, Hegar) was accordingly suggested.

I was disposed to regard the vomiting as reflex, and the inflammation of the endometrium as the exciting, peripheral irritant, in the entire absence of any other plausible or adequate explanation. The anæmia was neither so profound nor so acute as to constitute a sufficient cause. Then the vomiting ceased at once upon the termination of pregnancy. Moreover, to attribute the hyperæmia to cerebral anæmia is only to make a slight alteration in the immediate pathology, and the endometritis still remains as the first cause.

The quantity of opium exhibited from first to last was relatively small, and the vomiting continued long after the discontinuance and complete elimination of the drug.

The subject of diagnosis has been discussed at some length for the reason that sufficient attention is not usually given to the differentiation between uncontrollable vomiting in pregnancy, but sustaining no necessary relation to that state, and the form of the disorder incident to gestation. Guéniot pertinently insists upon three elements in the diagnosis, that it is necessary to bear clearly and distinctly in mind. These elements are: (1) The diagnosis of pregnancy; (2) the diagnosis of the determining or adjuvant cause of the vomiting; (3) the differential diagnosis between the obstinate vomiting due to pregnancy, and obstinate vomiting due to other causes, entirely independent of pregnancy.

It is well known that German observers see very few fatal cases of the so-called uncontrollable vomiting of pregnancy, while American, English and French clinicians record very numerous examples. It is also a fact that the diagnostic criteria of the latter class of observers, as shown in the literature of the subject, are often very far from being either numerous or exact. I hope to be pardoned for this digression, but I speak feelingly on the subject. Only a few months

since a fatal case of alleged uncontrollable vomiting of pregnancy came under my observation, in which the first element in the diagnosis, the fact of pregnancy, had not been demonstrated.

Treatment.—After free evacuation of the intestinal tract, absolute rest in bed in the horizontal position, isolation of the patient, and freedom from all extraordinary sensory excitants were secured. Small quantities of peptonized milk, at long intervals, and dry champagne, were exhibited, only to be rejected as soon as swallowed. Cocaine *per os*, morphine and atropine hypodermatically were apparently without effect.

Then absolute stomach-rest was maintained, and nutrient enemata were exhibited. At the same time full doses of chloral and potassium bromide (thirty grains of the former to sixty grains of the latter) were administered every eight hours per rectum. The viscus proved tolerant, and all the food and medicine, exhibited per anum, were retained. This plan of treatment was persisted in for the four days following.

At the expiration of the first week, under my care, the patient was decidedly worse. The hyperemesis and uterine discharge continued without abatement. The patient was so weak that she could scarcely lift her head from the pillow. She was evidently in a critical state. Temperature slightly subnormal, pulse 120.

I did not make the application of a ten per centum solution of argentic nitrate to the vaginal portion, as suggested and practiced many years since by M. O. Jones, of Chicago. The omission was due to the fact that I was unable to recognize any serious morbid state of the vaginal portion. I now regret this omission. The method is a most valuable means of treatment. It has been generalized by Sims, Carl Braun, Welpner and others, and is at the present time extensively practiced as an efficient routine procedure, although of course largely empirical. In my own hands the plan has commonly yielded excellent results.

Copeman's method of cervical dilatation was accidentally employed in the exclusion of placenta prævia. The index finger was passed through the canal of the softened vaginal portion up to the head, covered by the membranes, with extreme ease, but without the slightest effect upon the vomiting.

I was very reluctant to interrupt pregnancy, because the force and frequency of the foetal heart-tones were perfectly normal, and because I had never encountered a case of the pernicious vomiting of pregnancy, in which the therapy just outlined was not sufficient at least to palliate the symptom until its spontaneous disappearance. But the critical state of the patient, and the continuance of the uterine discharge, did not seem to me to justify further expectancy, so, on August 19th, with the advice and consent of Dr. Foster,

I determined to induce abortion under the two-fold indication of the vomiting and the endometritis.

After thorough cleansing and disinfection of the vagina and lower half of the cervical canal, a sterilized, flexible bougie, No. 17, French scale, was introduced between the chorion and the anterior uterine wall, to its full length. The objection has been urged against this method of the induction of abortion and premature labor (Krause's), that dangerous hæmorrhage is liable to occur from detachment of the placenta.

Ahlfeld,² however, has shown that this accident is apt to take place only when the after-birth is implanted near the os internum, while Leopold³ points out certain anatomical characters by which the placental site may be recognized and avoided in many cases. It is possible, with a little practice, to palpate the tubes through the abdominal parietes, throughout their course, in very many, probably the majority of cases. When the placenta is implanted against the anterior uterine wall this region is uncommonly protuberant, while the tubes may be followed from their origin in the median line of the fundus downward and backward. In posterior insertions of the after-birth, the tubes apparently take their origin at a point nearer to the front, and pursue a course downward and forward, while there is absence of any unusual protrusion of the anterior uterine wall.

Schauta⁴ has suggested an excellent plan to prevent the entrance of air along with the bougie into the cavum uteri. He recommends the introduction of the instrument through a speculum partly filled with fluid, so that the vaginal portion is completely covered with a thin layer.

Two hours after the bougie was placed labor pains began, and the bag of waters formed. Eight hours later the amnion ruptured, and a living foetus, together with the bougie, were expelled. The foetus moved its limbs, but soon expired. Body-weight, 205 grams; length, 27 centimetres. Its head was covered with hair, and the body with lanugo. These characters indicated a probable age of five months.

The placenta, expelled by Credé's method, was of normal size, shape and implantation, so far as the latter fact may be inferred from the site of the single perforation in the amnion, through which the foetus passed. The maternal portion of the placenta was of fresh appearance, covered with the superficial, cellular layer of the decidua serotina, in the form of a grayish-white membrane. The surface was entirely free from old blood-clots, and was probably adherent in a natural fashion to its uterine site until the rupture of the amnion. Microscopical examination revealed perfectly normal tissue.

² Berichte und Arbeiten, Bd. II, p. 106.

³ Der Kaiserschnitt, etc., p. 27, Stuttgart, 1888.

⁴ Grundriss d. Operativen Gubertshilfe, p. 53, Wien, 1885.

The chorion l ave, however, was covered all over with shreds of tissue, apparently of decidual origin, and thin laminated blood-clots. These clots were of various ages, some old and discolored, showing resorption changes, others of recent date.

Dr. Bayard Holmes examined these shreds of decidua under the microscope. His report of the pathological condition in the case under discussion is so nearly identical with Hegar's⁵ description of hydrorrh ea gravidarum that I substitute the latter.

"The anatomical basis is a hypertrophic development of the uterine mucous membrane, accompanied by hyper emia, and abundance of vessels which extends itself, not alone in the interstitial tissue, but also, according to my examinations, to the glandular bodies. There is present a lively process of new cell formation, and the separate tissue parts and tissue elements possess an unusual strength and cultivation. Particularly did I find the glands in such number and size as I have indeed rarely seen them in the first months of pregnancy. One remarked therewith much less of degenerating metamorphosis of the decidua than is otherwise the case at the eighth month. May we now describe the process as a chronic inflammation, or may we prefer to speak of it as simply a hypertrophic condition of the uterine mucous membrane? Assuredly is it that the principal symptom of the hydrorrh ea—the increased secretion of the mucosa—finds a perfectly adequate explanation in the anatomical discoveries. The secretion is furnished pre eminently by the glands."

Following the evacuation of the cavum uteri, the patient fell into a refreshing sleep. When she awoke the next morning she complained of hunger, and retained all the food she was permitted to consume. Nausea and vomiting had ceased suddenly, not to recur. The temperature returned to the normal, and the heart's action gradually became slower and more forcible.

From time to time shreds of thickened decidua were expelled, but the lochial discharge was normal in quantity. Involution was uncommonly rapid and complete for the period of time. The patient left her bed on the fourteenth day after the abortion, and soon after resumed her domestic duties. She was informed that subsequent treatment would probably be necessary, as it was not likely the endometritis would terminate spontaneously in resolution. I saw her in the following November, when she appeared remarkably well. It was recommended to her that she should consult Dr. Foster with reference to her former condition. In a letter dated January 14, 1888, Dr. Foster writes: "A considerable degree of subinvolution is present; the cervix, engorged, large, pouting, red, emitting light-colored glairy

discharges, blood following the gentle introduction of a soft rubber probe into the uterine cavity." In an inveterate case of this character, after failure of less heroic measures, the mechanical removal by curettement of the diseased mucous membrane deserves consideration. Martin, D uvelius, Benicke, J. Veit and others have shown that after cure a new endometrium of relatively normal functional activity is formed.

The notion that endometritis gravidarum is an occasional determining cause of pernicious vomiting is by no means new. Dance and Chomel have described certain morbid states of the placenta and membranes, that they regard as important etiological factors. Ebele⁶ has asserted his belief in this causal relation before the Obstetrical and Gynecological Society of Berlin. J. Veit⁶ has recently reported three cases, in which a necessary relation between the two conditions is apparent, although the evidence is far from being demonstrative.

The history of the first case disclosed uncontrollable vomiting, and unbearable gastralgia in a former pregnancy, followed by spontaneous abortion. The gastric symptoms recurring in a subsequent pregnancy, the egg, showing morbid changes in the decidua vera, was artificially removed. In the second case uncontrollable vomiting was accompanied by severe uterine h emorrhage, indicating the use of the tampon. The ovum, artificially removed, revealed characteristic alterations in the decidua serotina. The third ovum, removed on account of vomiting, was a typical example of glandular degeneration of the decidua serotina and vera. Veit's argument is briefly: (1) Changes in the decidua constituted the only appreciable, coarse lesions in connection with the genitalia in these three cases, and there was no other apparent cause present; (2) vomiting ceased immediately upon the removal of the ovum, and the elimination of the endometritis. Of course, it cannot be denied that when the uterine cavity is emptied other potential etiological factors are also rendered inoperative; (3) it is a well-known fact that gastric disorders, reflex in origin, are common symptoms of endometritis in non-pregnant women.

In the case described in this note an important link in the chain of evidence is supplied. The vomiting was aggravated *pari passu* with the advance of the inflammation of the endometrium. The fact, that vomiting did not occur in former pregnancies in this case, and that, in general, vomiting is an infrequent symptom of hydrorrh ea gravidarum do not constitute valid objections to the theory for obvious reasons.

The case is furthermore of interest on account of the late period of the occurrence of the vomiting. The symptom appearing for the first time as late as the sixteenth or eighteenth week, after

⁵ Monatschrift f. Geburtskunde u. Frauenkrankheiten. 1863.

⁶ Loc. cit., p. 643.

the corpus uteri had passed up into the abdominal cavity, could plainly sustain no relation whatever to any form of flexion or displacement.

Nor is the artificial induction of abortion, under the indication of endometritis, in the entire absence of such a complication as vomiting, an unfamiliar, although, of course, an uncommon procedure. J. Veit¹ records two cases, in which the operation was considered under this indication in the absence of all others. In the one case the operation was performed, in the other spontaneous abortion occurred.

When the pernicious vomiting of pregnancy is symptomatic of endometritis, the induction of abortion would naturally be considered earlier and with greater favor than when the disorder is the result of other causes. Schröder has repeatedly emphasized the folly of preventive treatment of threatened abortion, when there is reason to believe the embryo is dead, or that the ovum is hopelessly diseased; not, indeed, advising the active interruption of pregnancy, but warning against the useless protraction of the state of pregnancy by rest in bed and opiates. When the embryo is dead, or the ovum hopelessly diseased, abortion is physiological.

2330 Indiana Avenue.

DR. H. O. MARCY, of Boston, was interested in the subject of the paper, since it placed an old topic in a new light. He had studied carefully a number of cases since familiar with the views of the late Professor Ercolani, and found, as he believes, in them the real explanation of the pathological conditions. Soon after impregnation the uterine glands become greatly hypertrophied, and furnish a secretion of physiological necessity to the developing ovum. Normally, however, these undergo atrophy as the decidua serotina develops into the true placental structures. Traces of these may be seen in the decidua vera even at delivery.

In the conditions described in the paper as endometritis hydroporrhea gravidarum, this atrophy of the glands does not take place, but, on the contrary, hypertrophy ensues, and secretion from these enlarged utricular glands takes place, giving rise to the name hydroporrhea, with a proliferation of the connective tissue, stroma, etc. Often, *pari passu*, these fail to develop the maternal secretory villi, either in a part or over the whole placental site, and the fœtus either undergoes an imperfect development, or perishes for want of nutrition; and if the case is an extreme one, there is produced the condition known as mole pregnancy. As the changes go on, according to the varying states of placental development in the maternal glandular organ, the result becomes greatly varied, both as to the uterus and contents, as well as to the danger to the mother.

If this explanation is correct, it simplifies greatly the problem of treatment, and if the diagnosis has been correctly made, as just differentiated by Dr. Nelson, of Chicago, shows the utter futility of cervical applications or dilatation. The blighted ovum must be removed, and the uterine mucosa regenerated. This is usually better done as a surgical rather than as an obstetrical operation. Prompt recognition of these conditions will save many lives, and when it becomes accepted that the fœtus can hardly be carried to a self-sustaining individual life, no longer will the profession hesitate to endanger, by waiting to extremis, the mother; and, as in the case of the Catholic, the clergy will not intervene under the teaching that the life to come, *i. e.*, the developing child, is of greater value than that which is, the life of the mother. Dr. Marcy closed by saying that he was still a student of these interesting changes, and would consider it a personal favor to receive specimens from any of the members for careful examination.

THE USE OF ARSENIC IN DERMATOLOGY.

Read in the Section on Dermatology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY B. MERRIL RICKETS, M.D.,
OF CINCINNATI, OHIO.

There has been of late years a very great improvement in the manner of obtaining favorable results in the treatment of cutaneous diseases with the various forms of arsenic. This, perhaps, may be ascribed to technicalities which I think may be classed as circumstantial.

The use of the drug has been periodical, at times occupying one of the most prominent positions of any in the treatment of skin diseases; again at other times it has been condemned, and like many remedies has been handed down to a time when it is more appreciated than ever, not only in Dermatology, but in general practice.

Many times competent experimenters have made efforts to have its use abandoned, or at least to give it a very narrow limit indeed, but again and again it has asserted itself to be the sheet anchor in skin affections characterized by scabiness, such as is found in psoriasis, squamous eczema, impetigo, pemphigus and some of the eruptions due to ganglionic lesions of the nerve.

Like the different generations of people watching the rise and fall of the Roman Empire, the older members of our profession have witnessed the various changes the use of arsenic has undergone during the past half-century or more. While its use has been general, its abuses have been known to but few of the more careful observers, as but few have the time, and still fewer the opportunity and inclination to make the necessary observa-

¹ Zeitschrift f. Geburtshilfe u. Gynäkologie, XIII Band, 1886, p. 388.

tions to arrive at definite conclusions with reference to its use.

For centuries the Hindoos prescribed it for scaly affections, although it was not known by whom it was first recommended in this class of diseases. However, it is known that Adair, of France, used it as early as 1783, followed by Drs. Martin, Potter, and Otto, of the United States, 1796-1804. Sometime after this Drs. Girdlestone, Willan and Bateman, of England, corroborated the views of these gentlemen, adding that it was the best remedy in the treatment of lepra and psoriasis. We have but few remedies that are more generally prescribed, and I will add, a still less number that will give better results if limited to certain diseases, such as I have mentioned.

How often we hear it said that the results are unfavorable; that there is no special time for its administration, or disease for which it is indicated! Arsenic being inert in its metallic state, prevents it from being used internally, consequently it must be some one or more of its compounds upon which we must depend for constitutional effects.

While the administration of arsenious acid is more dangerous and its effects more difficult to regulate, I cannot feel but that it is the most certain remedy under all circumstances that we have among the arsenious compounds. There is a uniformity in its strength, as in all crystalline substances, and more especially in solutions immediately prepared therefrom, which cannot be found in the various pharmaceutical preparations.

Some of the liquors are many years old before they are administered and in many instances, no doubt, during this time have been subjected to injurious temperatures, rays of light, or other degenerative influences, or perhaps have been diluted for mercenary or other purposes. Under these conditions we are deceived in administering it, either by giving an overdose, a diluted article, or one entirely different from what is intended.

Especially is this so with the various forms of liquors, a drop of either one of which may be made, by evaporation alone, to represent twice or thrice the amount intended to be given. Thus it is that I have never been satisfied with the administration of the drug in either of these forms, and have resorted to the use of a freshly prepared solution by combining the arsenious acid with distilled water, adding a few drops of hydrochloric acid to hold it in solution.

Arsenic in water alone is not very soluble, being only about 1 to 500, but if the solution be carried to a boiling point and allowed to cool, it is found to be somewhat more soluble, about 1 to 425. When boiling continuously for three or four hours and allowed to cool slowly 1 ounce of water may be made to hold in solution grs. xijss. This increased solubility is supposed to be due to the conversion of the opaque or crystalline variety of the acid which always composes the powder into

the vitreous modification, which is more soluble in water. The opaque form attains the same solubility as the transparent by prolonged ebullition, otherwise the latter is the more soluble, but lessened by pulverization.

In the stomach arsenic may combine with the chlorides to form an arsenious acid in sufficient quantity to produce poisonous effects, consequently great care should be taken that they should not be given during the course of an arsenical treatment.

I generally give to an adult from $\frac{1}{16}$ to $\frac{1}{8}$ of a grain of arsenious acid after each meal, followed by 6 or 8 ounces of water. There are times, especially in psoriasis and the bullous eruptions, that it or the iodide given in conjunction with the iodide of potassium seems to be more beneficial than when given alone.

It is known that alkaline solutions readily dissolve arsenious acid, forming alkaline arsenites, the solutions of which are more capable of dissolving arsenious acid than water, and at the same time deposit it in crystals on cooling. In this way when combined with solutions of potash prismatic crystals of arsenious acid are deposited. Thus it is that it should be combined with hydrochloric acid, alkalies or their carbonates.

It is slightly soluble in glycerine, which is seldom used for that reason.

The combination of arsenious acid with black pepper is a decided improvement, as the amount of gastric secretion is increased, thereby making more perfect the process of digestion, hastening and making more general the absorption of the remedy. For some time opium has been combined, to check excessive peristalsis and inconvenience caused by either the pepper or arsenic, however, more likely to be due to the former than the latter. Hebra, I believe, being the first to employ and suggest this combination. That the original Asiatic pill, *acidi arsenici* gr. $\frac{1}{20}$ and *piper nigrum* gr. iv, contained an excess of pepper, there can be no doubt, especially when it was necessary to increase to any great degree the amount of arsenic.

In some cases of psoriasis I have found it necessary to increase the amount of arsenic to $\frac{3}{4}$ of a grain daily, which given in the original Asiatic pill would increase the amount of pepper to 1 drachm, enough to cause a burning sensation in the stomach, nausea, vomiting, diarrhoea, and tenesmus. With this condition of the alimentary tract it would not be advisable to give the drug as there would be no likelihood of its being assimilated with any regularity, but on the other hand might accumulate in the stomach or the duodenum to be absorbed later on with poisonous effects.

As a precautionary measure, it is advisable to keep the bowels moved in all cases where arsenic is being given, at least once a day, by saline cathartics.

The proportions in the more recent pill varies ; pepper from $\frac{1}{4}$ to 1 grain, opium from $\frac{1}{2}$ to $\frac{1}{4}$, and arsenious acid from $\frac{1}{2}$ to $\frac{1}{8}$ of a grain. I have not seen a person who could not begin with at least $\frac{1}{2}$ of a grain of the arsenic twice a day ; after the second day gradually increasing the dose one fraction of a grain each day, giving the pill say on the third day after dinner, on the fourth day after breakfast, and on the fifth day after supper, and so on until the maximum daily dose is reached.

As children do not tolerate opium readily, I have given the acid combined with pepperini in the proportion of $\frac{1}{60}$ to $\frac{1}{32}$ of a grain of the former, and the $\frac{1}{60}$ of the latter for eight or ten doses, given with increased frequency. That there is an increased efficiency in giving small doses of arsenic, and these doses given more frequently, there can, I think, be no doubt.

Unfortunately, the cases amenable to arsenical treatment must receive its prolonged application, and the best way, I think, to secure this is to begin with small doses, gradually increasing in frequency until the system is thoroughly saturated, without injurious effects. If there is no marked influence manifested by this time the system should be kept under the influence for several days, providing it produces no discomfort. It is seldom necessary to wait until the limit is reached to see good results, as 95 per cent. of the cases favorably influenced by arsenic will begin to improve very early in the course of treatment.

Its influence upon psoriasis in my own hands during the past year has been most agreeable, in that the last nine cases have terminated favorably within a very short time. One of the cases, in particular, which had existed for three years and had been treated for various diseases with no improvement, found himself entirely cured after a nine weeks' course of arsenical treatment. The highest daily amount that he took during this time was $\frac{3}{4}$ of a grain of arsenious acid. He was restricted as to diet, abstaining from the use of tobacco, tea, coffee, alcoholic and malt liquors. In all the other cases there was likewise favorable results, nothing whatever being done with them except internal medication and restriction of diet.

If the results were no better than those obtained by the various local applications, such as lotions, plasters and ointments, its advantages in the great majority of cases cannot be lost sight of, in that there is no uncleanness or discomfort whatever connected with it. When it is to be administered in the form of a pill it can be carried about in the pocket without inconvenience, thereby enabling the patient to be more regular in dosing for a greater length of time than he would be under other circumstances.

The *modus operandi* of the remedy is, like that of many others, not well understood. We do know, however, that the heart's pulsations are

increased in strength and frequency, and that the system in general is stimulated, and especially is this so with the nervous system.

It is an old Austrian custom to give horses doses of arsenic just before starting out for a long journey.

If, in psoriasis, the number of cells are increased in the *stratum corneum*, the rete malpighii thickened, papillæ increased in length and breadth, the capillaries which enter them enlarged and surrounded with cells, why have we not reason to think that the beneficial results of arsenic are due to some indirect influence upon the papillæ through the nerve supplying them. With these pathological changes there is some increased blood supply. Whether or not this is the cause or the result of the cell proliferation is not definite. However, it would seem that the enlarged vessels are the cause, and *not* the result, as is supposed by many. Admitting that the former is the case, the latter can be more easily accounted for, in that the cell proliferation would more likely be due to an increased rather than a decreased blood supply. The cells would in this way mature sooner thereby, multiplying at a greater rate.

In all scaly affections the epidermis is constantly being developed and thrown off, causing in the course of time, a drying up of the external layer of cells, which become detached, in this way causing the exfoliation of different degrees.

Does it not stand to reason that a remedy such as arsenic will stimulate to a more perfect action?

The nervous system would have the desired effect by giving to the nerve trunks better control over its peripheral distribution, the effect being in this case to contract the blood-vessels, thereby diminishing the blood supply and checking the rate of cell proliferation. This, I think, is the keynote in the use of this drug, which perhaps is more capable of having this influence than any other at present known to us.

It is this influence to which I ascribe the curative effects of arsenic upon ordinary warts. In them the papillæ are hypertrophied, hence the blood supply at that point is greater, and the action of the drug diminishes this blood supply by causing the vessels to contract, thus causing these papillæ to dry up and later to fall off.

However, after a time, with some shorter and others longer, there is the opposite effect, as we find congestion of the skin in many cases after a continuous use or an overdose of arsenic. The peripheral nerves have no doubt been overstimulated, thereby rendered incapable of contracting the vessels which they control, in other words, paralyzed, so that the walls of the capillaries and arterioles are relaxed, and allowed to carry an abnormal amount of blood, in this way causing the reddened and congested appearance so often the result of the use of arsenic.

When this condition exists, as in many acute

stages of disease, without the use of arsenic, great care should be taken not to give but the smallest doses, if at all, lest the condition might be aggravated. If the irritation cannot be allayed in a reasonable time it is better in the majority of cases to postpone giving the remedy.

At first its influence in psoriasis is to exaggerate redness and make the skin more inflamed, a condition which I have recently seen in a lady who had suffered for fourteen years with this disease. There was quite an extensive eruption over the body and extremities, also over the face and head. I gave her $\frac{3}{8}$ of a grain of arsenious acid, daily for two weeks, combined with pepper and opium. Near the end of this time she complained bitterly of redness, tenderness and intense itching, all of which caused her to abandon the treatment and exhaust her energies in condemning me and my proceedings in her case, at the same time admitting that there was less scaliness than when she first consulted me. She used some patent nostrum and continued to improve. At the end of five weeks she was free from the eruption, having, she said, taken but 50 of the $\frac{1}{8}$ grain pills. There can be no argument brought to bear which will, seemingly, convince her that the remedy had any effect whatever, unless it would have been to destroy her life. As she did not return the remainder of the hundred pills, and refused to compensate me for my services, I am inclined to think that she received the internal benefit of the 100 pills first prescribed.

Pemphigus is almost equally amenable to this remedy, the exudation of liquor sanguinis being as a rule diminished immediately after a few doses of arsenic have been given.

In these two diseases the illustrations are such that no doubt can hardly be expressed by those most familiar with them as to their efficacy or *modus operandi*.

Unfortunately, my experience and observation have been very limited in the use of the drug in this particular, consequently cannot speak with reference to frequent dosage. I should think, however, that we should expect the same good results as are obtained in psoriasis and other cutaneous affections.

It is not the reading of this paper alone, from which I expect to see personal or general benefit, but the discussion which I hope will follow. The sole effort has been to place the administration of this worthy drug upon a higher plane, and have those most familiar with its use express themselves freely.

DR. HOBART AMORY HARE, of Philadelphia, who, as is well known, has done a good deal of excellent work in experimental therapeutics and pharmacology, has been awarded the Fothergillian Prize of the Medical Society of London.

VAGINAL HYSTERECTOMY; THREE CASES, WITH TWO RECOVERIES.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY S. C. GORDON, M.D.,
OF PORTLAND, ME.

Within the last decade the views of the profession have almost entirely changed as to the pathology of cancer. From believing it to be but a local expression of a constitutional disease, it is now generally held to be local at first and gradually infecting the system. While the first belief existed the profession were indifferent to operative measures, and the victims of the disease shrank from any operation, which even the profession did not urge, or think offered much in way of cure or relief. If removal of the part affected was consented to it was usually too late to prevent systemic infection, and the public soon learned that a return was the rule, with very rarely an exception.

Careful pathological investigations and clinical experience gradually led to sounder views, so that now there is a general consensus of the best pathologists that if the disease is removed early and all the surrounding glands liable to be involved thoroughly extirpated, the liability to return is very much reduced, and many cases are radically cured. Obviously the sentiment of the laity has not kept pace with that of the profession, and many cases are secretly concealed until too late for radical operation. The forms of cancer that appear upon the face, lips, and parts of the body that are exposed, have generally been operated early, and we find, therefore, a very large percentage of cures—I think I do not overstate when I say that a majority of the cases of epithelioma of the lip and face that are removed never return. Statistics of operations for cancer of the mammary gland show a very marked increase in the number of recoveries over those of twenty years ago. Repeated operations for recurrences of the disease have proved of immense value in affording relief and prolonging life. Many instances are reported where the disease has apparently been arrested by extirpation of glands secondarily affected, and many years and much comfort enjoyed by the sufferers, who would have otherwise died from a loathsome and painful growth. I think no intelligent member of the profession to-day, will question that an early operation for the removal of any cancerous growth, no matter where situated, offers much the best chance to the patient.

That cancer of the uterus is no exception to this rule seems reasonable to believe. In a very large majority of all cases of cancer of this organ we find the milder form of the disease prevailing, viz., epithelioma. Whenever, in any other part of the body, we find this we consider it much more amenable to treatment (being less liable to return) than the other forms and, so far, more fa-

avorable as regards operation. The uterus should not be an exception in this respect. The chief difficulty lies in the lack (from various and obvious causes) of an early diagnosis. Women are so liable to leucorrhœa that it is only when it becomes excessive and offensive, or bloody, that they seek medical advice. In many cases too, they fear to ask lest their fear of cancer be confirmed. Add to this the dread of the knife and the sentiment, so prevalent, that operations do but little good, it is not to be wondered at that we see so many cases where the disease has advanced so far as to affect adjoining tissues. When this condition occurs but little hope remains for the radical operation.

In any given case, seen in the early stages, where the disease is confined to the cervix, there seems no valid reason for not operating by extirpation, except that of immediate mortality. Even in the present light of statistics, I feel quite sure that we are fully justified in taking all the risks. That in any disease which has a fatal tendency we are justified in resorting to any operation that offers a chance for life, I believe is a good surgical rule. Applying this rule to cancer of the uterus, we may safely assume that the disease if left to itself will surely prove fatal. Recovery from the operation of vaginal hysterectomy is certainly to-day as good as that of ovariectomy, and it is yet in its infancy. When to this we add the absolute cures now reported by Martin, Billroth and others, in Europe, and many in America, it would seem that the operation has a most brilliant future.

To my mind the superior drainage given by this operation, and the less amount of peritoneal surface exposed and wounded are the essential elements of success. The former (complete drainage) is without doubt by far the most important feature of all successful wound healing.

Believing, as I have for many years, in the doctrine of the local origin of cancer, I was ready to adopt the operation of vaginal hysterectomy whenever opportunity offered. Since the 1st of February last, I have had three such opportunities, and therefore offer as my only apology for reporting these cases, my desire to contribute to statistics now so rapidly accumulating.

Case 1.—Mrs. M., widow, aged 38, pregnant once; miscarriage at 3 months, or a little less, several years ago. The latter part of December, 1887, was taken with a sero-sanguinolent fetid discharge from the vagina, which soon became a profuse hæmorrhage, lasting two weeks. Repeated again in a week. Her physician found an epithelial growth from the posterior lip of the uterus as large as an English walnut, which bled very easily when touched. I saw her the last of January, and advised vaginal hysterectomy, to which she readily consented, after fully understanding all risks and chances for life.

The operation was made, and she made a very

rapid recovery, with no alarming symptoms at any time. Wound was entirely healed in about ten weeks, and she is now (May 1st) in perfect health, with no lack of color, so apparent at time of operation, and able to do any kind of work. She says she has not been as well for years.

Case 2.—Mrs. L., widow, aged 50, multipara. Two years ago I made double ovariectomy upon her, removing one very large cyst, and a smaller one as large as a man's fist. Six weeks before I saw her she began to have fetid serous discharges from the vagina, very profuse, and soon followed by quite large hæmorrhages. She was sent to me by Dr. Haines, of Ellsworth, Me., who suspected cancer. Examination showed epithelioma of the posterior wall of the cervix, and a narrow strip of the vagina adjoining was also involved, but from a history of very short existence with very limited area, I advised hysterectomy, to which she consented, after a full understanding of all the risks for and against.

The posterior incision was made behind the strip of vagina involved so as to include it with the uterus. I have no doubt that the disease began at the junction of the vagina and uterus. Every part of the diseased tissue was removed, so far as could be seen.

The operation was made April 2, and on May 7, she returned to her home—170 miles. She had no unfavorable symptoms from first to last, and at the end of four weeks the wound in the vagina was closed and the parts soft and in every way in good condition.

Case 3.—Mrs. —, aged 43, married, multipara. For more than a year prior to my seeing her she had had fetid, watery, purulent and bloody discharges, interspersed with some profuse hæmorrhages. When she came to me (sent by Dr. Morrison, of Bar Harbor) I found the uterus entirely movable and no portion of the vagina involved in the disease, but the cervix uteri entirely destroyed by ulceration. Her general condition was excellent, with no indication of systemic poisoning. Color good and spirits buoyant. After a full, clear understanding of the various methods of treatment which could be offered, and the hope and fears pertaining to each method, she and her husband very earnestly desired to have the operation of vaginal hysterectomy.

The patient was very stout and the vagina, naturally small, was so padded beneath the mucous membrane with fat that it was with much difficulty that I could find space for the various manipulations. Added to this, was the entire absence of any part of the cervix, by which to make traction, and an extremely large fundus uteri. It was with great trouble that I succeeded in retroverting the uterus, although the entire posterior wall of the vagina was cut across, and the cul-de-sac completely opened. I found the left broad ligament affected with the disease, but re-

moved all I possibly could, together with both ovaries and Fallopian tubes. The operation was an hour and forty minutes long as each step was very slow.

Within twenty-four hours she had a well marked peritonitis, which continued without abatement until the seventh or eighth day when she died. I tried to obtain catharsis on the third day, but was unable to move the bowels at all and there was undoubtedly obstruction as a complication. I am quite sure that under the same circumstances I should refuse to operate again, but trust to a temporary curetting and chloride of zinc.

In all three of these cases the technique of the operation was practically the same. I opened the pelvic cavity from behind close to the uterus, applied small compression forceps to bleeding points, next dividing the anterior vaginal wall at a corresponding point on the cervix, carefully separating the bladder by a scalpel handle and finger, finally completing the circle of the cervix, and then reverting the fundus by a strong Recamier sound in the uterine canal, while my fingers and vulsellum forceps grasped the top. I then applied a Spencer Wells' forceps to each broad ligament (thus controlling all hæmorrhage), and at once dividing the ligament on each side, I removed the uterus. In two of the cases the remainder of the broad ligament was long enough to ligate with catgut (which was used in all the cases) by passing a double-threaded needle through the centre and tying each way, and double wrapping. In the other case I stitched back and forth until I secured all bleeding vessels. All forceps were then removed and the peritoneum and mucous membrane on the posterior wall were sutured together. In neither of the cases was there a spoonful of hæmorrhage after the operation.

I think I shall in future operations draw down the uterus, divide the tissues, compress all bleeding vessels, and remove without attempting to turn the uterus. I think it unnecessary labor and complication without a corresponding advantage.

My experience with these three cases confirms my former views that there is much to be gained by early removal, even were comfort to the patient alone to be considered. Of course time only can tell what they promise in the way of cure. Of course every man will operate or not as he believes or not in the theory of the local origin of cancer. That must be the crucial test. There can be no logical conclusion short of complete removal if one does hold to this theory. The application must alike be made to the uterus, mammary gland, lip, or whatever organ or part is affected. The duty of the profession lies in reforming public sentiment, so that victims of this terrible scourge to humanity may seek advice early and thus enable the profession to place this operation among the other brilliant triumphs of surgery for which the last decade is so conspicuously illustrious.

A CASE OF POISONING BY SULPHATE OF ATROPIA; RECOVERY.

Read before the Medical Society of the District of Columbia, March 28, 1888.

BY LLEWELLYN ELIOT, M.D.,
OF WASHINGTON, D. C.

Cases of poisoning by sulphate of atropia are becoming very common since the application of the drug has become better understood. Its employment in the treatment of sciatica and various neuralgic affections, the sweating of phthisis, and its application in ophthalmic practice, are of daily occurrence. It is not a drug to be given with criminal intent, as its action and effects are not sufficiently understood by the general public. Poisoning by atropia results generally from mistaking its solution for some other medicine. It has been my fortune to meet with two cases of poisoning by this agent, one of which has already been published,¹ and the other the one which is the subject of this report. Both resulted favorably, but only after severe symptoms.

Maude H., æt. 26 years, prostitute, born in New York, of good physique. Gave a previous history of rheumatism and alcoholism with its consequent exposure. She denied most positively ever having had syphilis, but admitted having had a vulvar abscess, for which she was treated in a hospital, where she was assured by the physician who attended her that she had no specific taint.

At the time she was first seen, July 20, 1887, she was suffering from an attack of rheumatism, for which she was given, *R. Potassii iodidi*, 4 gm. (3j); *aquæ destillat.*, 128 cc. (5iv). *M. Sig.* Tablespoonful four times a day. She had been under treatment for some eye affection, the nature of which I do not know, and had a vial containing *R. Atropiæ sulphat.*, 267 gm. (gr. iv); *aquæ rosar. dest.*, 32 cc. (3j). *M. Sig.* One drop in the eye three times a day. For some days she took the iodide solution with benefit.

On the 22d, for some reason no one knows, the bottle containing the atropine solution was emptied into a goblet and put upon the sideboard. The patient, thinking it was her medicine, swallowed it down in one gulp, not noticing the bitter taste, making the amount of atropia sulphate taken .267 gm. (gr. iv). This was at 9:30 P.M. In fifteen minutes she complained of a dryness of the mouth, tickling in the throat, difficulty of swallowing and hoarseness, but not enough to cause any annoyance. Very soon she became flighty, light-headed, with hallucinations and confusion of thought, headache and disordered vision; at this time the body assumed a livid redness and was very dry. She staggered in her gait and was unable to articulate clearly. These symptoms were allowed to continue, as the inmates of the house "thought it was a case of drunken hysterics," until 10:30, when I was called. At this

time her condition was alarming. The pupils were enormously dilated; there was absolute impossibility of swallowing, constriction of the throat; tongue, gums and entire mouth perfectly dry, voice very husky; violently delirious, singing, crying and fighting; pulse 140, respiration 50, temperature 98° F. Her jactitations almost amounted to convulsions and it required much force to control them. She was given a subcutaneous injection of apomorphia .0055 gm. (gr. $\frac{1}{12}$), which failed to vomit her, although it was repeated. She was then given morphia sulphate .022 gm. (gr. $\frac{1}{3}$) hypodermically. In twenty minutes, her condition remaining the same, she was given another ($\frac{1}{3}$ gr.) .022 gm.; this was repeated in thirty minutes. Following the last injection she became more quiet, the jactitations were less frequent, the delirium muttering, pulse 114, temperature 98° F., respiration 38, pupils dilated about one-half. In thirty minutes she was given another hypodermic of ($\frac{1}{3}$ gr.) .022 gm.. This made .086 gm. ($1\frac{1}{3}$ gr.) of sulph. of morphia given in 80 minutes. Respiration now became less frequent, falling to 10 in a minute and labored, the pulse continued at the rate of 96 to 114, becoming feebler, the surface still cold and dry. The pupils soon showed contraction, and the effect of the morphia became apparent in the stertorous respiration and contracted pupils. Strong coffee was given by the rectum; at the same time citrate of caffeine .067 gm. (gr. $\frac{1}{2}$) was administered hypodermically and repeated every hour until the effects showed themselves, which was at 2 o'clock, when she could be aroused by shaking, but would fall off again into a deep sleep.

It was not until 4 o'clock, seven hours after taking the poison, that I considered her out of danger. Giving directions that she be given strong coffee, with an occasional dose of citrate of caffeine, I left my patient comfortable. For some days she suffered from headache and disordered vision, was morbidly sensitive to sounds; her helplessness amounted almost to paralysis of the arms and legs. She had no recollection of what had happened from the time of taking the atropia solution until the morning of her recovery.

In the treatment of this case the large and repeated doses of sulphate of morphia may seem rash and uncalled for, and in the end requiring measures to antagonize them, but, to my mind, they were the patient's salvation.

Cases of poisoning, from whatever agent they may occur, require treatment of the most vigorous order, and it is to this same rough-skod plan of treatment, which I have always followed, that I owe my invariable successful result in all the cases of poisoning that have fallen into my hands.

In a rapid glance at the reported cases of poisoning by sulphate of atropia, we find that the toxic effects have followed the instillation of weak as well as strong solutions into the eye—Knapp

has recorded a case following its application to the middle ear—as well as its careless administration by both attendants and pharmacists. In the last class of cases, those following the carelessness of attendants and pharmacists, I can see no extenuating circumstances.

The failure of the apomorphia to vomit in this case makes the second occasion on which it has refused to act in my hands.

Some idea as to the amount of sulphate of atropia that has caused toxic effects will be obtained from the following journal references: Newland¹ reported the case of an adult who took .08375 gm. (gr. $\frac{1}{4}$), and recovered under morphia sulphate .01675 gm. (gr. $\frac{1}{4}$) every twenty minutes, and ammon. carb. .133 gm. (gr. $\frac{1}{2}$) every ten minutes for two hours. Andrew² reported an adult who recovered after taking .044 gm. (gr. $\frac{3}{8}$). Warden³ reported bad effects following the hypodermic injection of 5 or 6 drops of liq. atrop. sulph. (B. P.) .00268 gm., or gr. .0418. C.⁴ reported a child 3 years old who died after taking more than .033 gm. (gr. $\frac{1}{2}$), and treated with tincture of opium. Sinclair⁵ reported an adult who recovered after taking .0083 gm. (gr. $\frac{1}{8}$). Agnew⁶ reported a case of an adult who recovered, under tincture of opium, after taking .100 gm. (gr. $1\frac{1}{2}$). Holt-house⁷ reports the case of his own child, nearly 4 years old, who took .025125 gm. (gr. $\frac{3}{8}$), and recovered under ether, brandy and ammonia. Leach⁸ reported an adult recovering after taking about .067 gm. (gr. $\frac{1}{2}$). Chambers⁹ reported a child, 4 years old, who recovered after taking 2 teaspoonfuls of a solution .133 gm. to 32 cc. (gr. $\frac{1}{2}$ to $\frac{3}{4}$). Chisolm¹⁰ reported the case of a child 4 years old who experienced bad effects from .00012411 gm. (gr. $\frac{1}{8000}$). Opie¹¹ reported a child 21 months old, that was given by mistake a solution containing sulph. atropia .044 gm. (gr. $\frac{3}{8}$) with sulphate of zinc .022 gm. (gr. $\frac{1}{4}$). Severe cramps in the stomach, with rigid contraction of the abdominal muscles and retraction of the limbs, followed, but it recovered under tincture of opium. Johnston¹² reported a woman recovering after taking .044 gm. (gr. $\frac{3}{8}$), under sulphate of morphia and caffeine. Prentiss¹³ reported a child 19 months old recovering after taking nearly .067 gm. (gr. $\frac{1}{2}$), under tincture of opium and tannic acid. Stocks¹⁴ took 6 minims of a solution .067 gm. to 8 cc. (gr. $\frac{1}{2}$ to $\frac{3}{4}$). Clark¹⁵ reported a boy who was given atropia sulph. .008 gm. (gr. $\frac{1}{8}$) instead of sulph. morphia, recovering after injections of .01675 gm. (gr. $\frac{1}{4}$) morphia sulph. Steele¹⁶ reported a case of recovery following .008 gm. (gr. $\frac{1}{8}$), under tincture of opium with brandy and water. Mackenzie¹⁷ treated an adult with repeated injections of .01675 gm. (gr. $\frac{1}{4}$) morphia sulphate, after taking about .133 gm. (gr. $\frac{1}{2}$). Murrell¹⁸ treated an adult after taking about .01675 gm. (gr. $\frac{1}{4}$), with hypodermics of morphia sulphate .033 gm. (gr. $\frac{1}{2}$) every hour until he had given .133 gm. (gr. $\frac{1}{2}$).

At the same time he used carbonate of ammonia and whisky. Kuechler²¹ quotes a case of Samuelson, recovering, that had taken .022 gm. to .024 gm. (gr. $\frac{1}{3}$ to gr. $\frac{3}{8}$). Landesberg²² reported two adults recovering; one took .0067 gm. (gr. $\frac{1}{10}$) hypodermically; the other, after taking a teaspoonful of a solution of .067 gm. to 12 cc. (gr. j to 3ij). In each case morphia sulphate .01675 gm. (gr. $\frac{1}{4}$) was given. Eliot²³ reported an adult taking .033 gm. (gr. $\frac{1}{2}$), and recovering under morphia sulphate .022 gm. (gr. $\frac{1}{3}$) repeated. Seargent²⁴ reported an adult who took .033 gm. (gr. $\frac{1}{2}$), with morphia sulphate .05025 gm. (gr. $\frac{3}{4}$), was given morphia sulphate .067 gm. (gr. j) and eserine .00418 gm. (gr. $\frac{1}{16}$); this last was repeated in the dose of .0025 gm. (gr. $\frac{1}{4}$), with recovery; Knapp² reports bad symptoms following dropping 4 drops of a 1.5 per cent. solution in the ear. Flynn²⁵ reported a child 15 months old taking about a teaspoonful of a solution of .133 gm. to 32 cc. (gr. ij to 3j) treated successfully with morphia sulphate. Luff²⁶ reported a child 2 years old recovering from taking a solution containing .067 gm. (gr. j); treated with morphia acetate .011 gm. (gr. $\frac{1}{6}$) and then .01675 gm. (gr. $\frac{1}{4}$). Greenway²⁷ reported a case taking at least a teaspoonful of the B. P. solution, recovering from the poison, but died on the fourth day. Gross²⁸ reported a case proving fatal after taking .201 gm. (gr. iij), and treated with .033 gm. (gr. $\frac{1}{2}$) injections of morphia acetate and sulphate. Montgomery²⁹ saw bad effects following instillation of a solution into the eye. Wallace³⁰ reported an adult presenting bad effects following the external use of it in a liniment, the amount absorbed being .022 gm. (gr. $\frac{1}{3}$). Fitzmaurice³¹ reported a child 2 years old recovering after taking about .033 gm. (gr. $\frac{1}{2}$), treated with solution of potash and tincture of opium. Bowles³² reported bad effects from an eye-wash, .267 gm. to 32 cc. (gr. iv to 3j). Loomis³³ reported an adult recovering after taking about .067 gm. (gr. j) in solution; was given tannic acid and animal charcoal and fluid extract of calabar bean, morphia sulphate, and ammonia.

From an examination of these cases we find that out of the thirty-two cases reported only two proved fatal, the first,⁹ a child 3 years old who took more than .033 gm. (gr. $\frac{1}{2}$); the second,²⁸ a woman who died after taking .201 gm. (gr. iij). The smallest amount producing bad effects is in the case of the child reported by Chisholm,¹² where, according to his calculation, but .00012411 gm. (gr. $\frac{1}{8000}$) was taken. The next in smallness of dose is by Warden,⁵ where .00268 gm. (gr. $\frac{1}{375}$) was given hypodermically.

In treating cases of poisoning by the sulphate of atropia, the tincture of opium, the preparations of morphia, eserine, fluid extract of calabar bean, strong infusions of coffee, ammonia and brandy, with electricity, have been the measures preferred.

Morel³⁴ recommends the use of tannin and reports three cases recovering by it. The cases of Prentiss¹⁶ and Loomis³³ are the only ones in which I find mention made of its use, but Loomis used at the same time animal charcoal and fluid extract of calabar bean, to resort to morphia sulphate in the end.

Such is the result of a rapid glance at the recorded cases of atropia poisoning which I have made. Cases of belladonna poisoning are intentionally omitted, as well as those in other than the English language, as I had not time to hunt them up, and I conclude that poisoning by atropia sulphate is by no means fatal, if vigorous measures are adopted at once and persisted in until their effects are visible. In the treatment of any case of poisoning, be the amount small or excessive, the first thing for the medical man to do is to retain presence of mind, and not allow the friends and the family to interfere with him, for the moment any outside influence is brought about he thereby loses just so much.

¹ Eliot, L., *Med. Record*, N. Y., 1883, xxiv, p. 372.

² Knapp, H., *Arch. Otolaryng.*, N. Y., 1882, xxi, p. 23.

³ Newland, T. H., *St. Louis Med. and Surg. Jour.*, 1874, xi, p. 321.

⁴ Andrew, J., *Month. J. M. S.*, Lond. and Edin., 1852, xiv, p. 34.

⁵ Warden, C. J., *Indian Med. Gaz.*, Calcutta, 1879, xiv, p. 140.

⁶ C. Boston M. and S. Jour., 1869, lxxxix, p. 148.

⁷ Sinclair, A. D., *Boston M. and S. Jour.*, 1863, lxxviii, p. 171.

⁸ Agnew, D. H., *Penn. Hosp. Reports*, 1863, i, p. 356.

⁹ Holthouse, C., *Med. Times and Gaz.*, Lond., 1859, xl, p. 601.

¹⁰ Leach, H., *Ibid.*, 1865, ii, p. 34.

¹¹ Chambers, Dr., *Lancet*, Lond., 1864, i, p. 8.

¹² Chisholm, J. J., *Balto. M. Jour.*, 1870, i, p. 25.

¹³ Opie, Thomas, *Physician and Surg.*, Balto. 1872-3, i, p. 6.

¹⁴ Johnston, C., *Balto. Med. Jour. and Bull.*, 1871, ii, p. 216.

¹⁵ Prentiss, D. W., *Phila. Med. Times*, 1879-80, x, p. 164.

¹⁶ Stocks, A. W., *Brit. Med. Jour.*, Lond., 1870, i, p. 489.

¹⁷ Clark, E. A., *Med. Arch.*, St. Louis, 1869, iii, p. 16.

¹⁸ Steele, W. S., *Med. Circ.*, Lond., 1862, xx, p. 202.

¹⁹ Mackenzie, J. C., *Cincin. Lancet and Obs.*, 1878, xxi, p. 148.

²⁰ Murrell, T. E., *Med. and Surg. Report*, Phila., 1876, xxv, p. 269.

²¹ Kuechler, M., *Med. and Surg. Report*, Phila., 1860, v, p. 110, from Koenigs-Berger *Med. Jahrbücher*, 1858, i, 1 and 2.

²² Landesberg, M., *Med. Bull.*, Phila., 1881, iii, p. 11.

²³ Eliot, L., *Med. Record*, N. Y., 1883, xxiv, p. 372.

²⁴ Seargent, A., *Louisville Med. News*, 1881, xii, p. 99.

²⁵ Flynn, J. W., *Med. Record*, N. Y., 1882, xxi, p. 375.

²⁶ Luff, A. P., *Brit. Med. Jour.*, Lond., 1886, ii, p. 19.

²⁷ Greenway, A. S., *Brit. Med. Jour.*, Lond., 1878, ii, p. 516.

²⁸ Gross, S. W., *Amer. Jour. Med. Sc.*, Phila., 1860, lviii, p. 401.

²⁹ Montgomery, W. T., *Chicago Med. Jour. and Ex.*, 1879, xxxviii, p. 43.

³⁰ Wallace, A. W., *Med. Press and Circ.*, Lond., 1882, xxxiv, p. 69.

³¹ Fitzmaurice, T., *Lancet*, London, 1881, ii, p. 414.

³² Bowles, R. L., *Brit. Med. Jour.*, Lond., 1876, i.

³³ Loomis, H. P., *Med. Record*, N. Y., 1885, xxvii, p. 235.

³⁴ Morel, *Annal. de Société de méd. de Gaud.*, September, 1872 p. 181.

MODERN SURGICAL TREATMENT OF THE URETHRA.

Read before the Henderson Medico-Chirurgical Society, June 12, 1883.

BY JOHN YOUNG BROWN, M.D.,
OF HENDERSON, KY.

In no branch of surgery has improvement been more marked, within the last ten years, than in the surgery of the urinary bladder and the urethra. Therefore, I have chosen this subject to present to your society to-night, in order that I may give to you a brief review of some of the modern surgical methods of treating diseases of this tract,

and with the hope that my paper may succeed in drawing forth discussion on these important points. I shall first take up gonorrhœa, its modern pathology and antiseptic treatment, and shall illustrate to you Brewer's method of continuous irrigation, and give you my experience with it in the treatment of seventy cases of acute and chronic gonorrhœa. I shall also show you Keyes' modern instrument for deep urethral injection of nitrate of silver, and give, in so far as I am able, its uses in the treatment of urethritis. Next I shall take up the modern views in regard to stricture of the urethra, with especial reference to its pathology. I shall then, if time and space permit, briefly touch cystitis.

There is no subject, from a surgical standpoint, more important or more interesting than gonorrhœa, and in order that it may be successfully and scientifically treated, it is necessary that the surgeon thoroughly understand its ætiology and pathology. Not until recently have we been able to treat this trouble from a strictly scientific point of view, and although the present methods fall far short of ideal perfection, still no one can contrast the present with the past line of treatment without making the acknowledgment of its great superiority. In 1879 Neisser made the announcement to the world that he had discovered the specific microbe of gonorrhœa, to which he gave the name of gonococcus. He described it as "an ovoid microbe found in the the protoplasm of the pus cells, constricted in one diameter and subdivided." Since this announcement, bacteriologists, both in this country and abroad, have thoroughly investigated this subject, and, by experimental inoculations and cultivation, it has been proven that true gonorrhœa is due to the gonococcus of Neisser. In every case of gonorrhœa these microbes are uniformly present, and, by a simple method of staining, can be readily demonstrated. The time allotted to me does not permit of my going into this subject in detail, therefore I trust you will accept the simple statement of fact, for there is no longer a question of the specific nature of gonorrhœa. "Gonococci are found in the secretions of every case of gonorrhœa, and secretions that do not contain gonococci are invariably non-infectious if brought upon the urethral mucous membrane. These microbes have a peculiar invasive faculty, by which they penetrate first the superficial layers of the epithelial membrane, and gradually, by further proliferation, the sub-mucous layer. The route of their inroads is along the intercellular substance. An intense hyperæmia of the capillaries and other blood vessels along the seat of the primary infection, leads to a massive emigration of white blood corpuscles and an abundant secretion of purulent pus. The destruction of the epithelial urethral investment is often followed by the exudation of a croupous membrane, beneath which colonies of gonococci

are found. From the sub-epithelial tissue gonococci may gain entrance to the lymphatics, and through them be transported to the endocardium, joints and tendinous sheaths of muscles.

The foregoing is a brief synopsis, taken in part from Gerster's late work on "Antiseptic Surgery," of the view now held in regard to the causation of gonorrhœa. This being the state of affairs, it is evident, reasoning from cause to effect, that the change in the treatment must necessarily be radical in the extreme, and I shall now attempt to sketch the modern antiseptic treatment of this troublesome malady. During the past ten months I have had under treatment seventy cases of gonorrhœa, in all of which I have followed antiseptic teachings, and with results both gratifying to myself and to my patients. Before going into detail I will show you the Kiefer nozzle for continuous irrigation. This is attached to an ordinary fountain syringe, and with an oil lamp and water can constitute all that is necessary for the treatment of ordinary cases. The plan of retro-injection or continuous irrigation is based on the specific nature of gonorrhœa, and consists in the daily use of large quantities of medicated and tempered water. In the acute cases the plan of treatment I use is as follows: Patient is given a mild purge, and the use of intoxicating liquors is prohibited. I then commence the use of the continuous irrigation, injecting twice a day a quart or more of hot bi-chloride solution 1 in 15,000, or even milder, if urethra is hypersensitive. This is kept up for four or five days, at the end of which time the discharge is, as a rule, considerably checked. As discharge grows scant and acute stage disappears, I change the injection, using the same amount of a saturated solution of boracic acid. In the majority of acute cases this plan will prove successful. In chronic cases the plan of treatment is slightly different. In these cases I examine first for stricture, and, if examination proves negative, I either dilate the urethral canal with a large sound, or set up an acute inflammation by the use of a strong solution of zinc chloride (gr. ij to 5j), thereby placing the urethral canal in condition for the use of retro-injection. I then begin as before, and use twice daily the bi-chloride injection, followed by the boracic acid irrigation. Following this plan of treatment, I have succeeded in curing the major portion of my cases, and I have yet to see a bad result following its use.

In chronic inflammation of the deep urethra behind the "cut-off" muscle, where retro-injection will not reach, the deep injection of nitrate of silver, accomplished by means of Keyes' modification of Ultzmann's instrument, which I now show you, has proven very successful in my hands. This instrument can also be used for cocaine injection, as any part of the urethra can be reached with it. Summing up the advantages and disad-

vantages of the foregoing method, I am able to give but one disadvantage, and that is the time and trouble required for its use, and truly the good resulting from it is sufficient to compensate for this.

Having briefly considered gonorrhœa, I shall now concisely sketch the modern views in regard to the pathology and treatment of urethral stricture. It is generally agreed upon that the common cause of urethral stricture is specific urethritis. All surgeons agree that acute gonorrhœa invariably begins in the anterior urethra, and gradually extends back, and "if allowed to run a chronic course, is very apt to become merged into what is known as chronic granular urethritis," by which term we are to understand that at one or more points in the urethra the epithelium has become so damaged by prolonged inflammation that the canal is no longer, in these spots, urine-tight, and the escape of urine into the peri-urethral tissue sets up a low grade of inflammation, which results in the throwing out of barriers of lymph, which ultimately become organized. The epithelial investment of the urethra, under normal conditions, is absolutely urine-tight, as has been satisfactorily demonstrated by Reginald Harrison, and he also contends that stricture formation is a conservative action. His arguments briefly expressed, are as follows: The function of the epithelial lining of the urethral canal being destroyed by long continued inflammation, layers of lymph are thrown out and become organized, thereby acting as a natural prophylactic measure against urine soakage. "Eventually, however, as in other compensating processes, certain inconveniences follow which constitute, as it were, an independent disease." The mucous membrane of the canal, although primarily involved, is only secondarily involved in the stricture-forming process, and, in many cases, strictures may be split without injuring the mucous lining of the canal.

The foregoing being the now accepted pathology of urethral stricture, I shall now consider its treatment in a general way from this standpoint. The various surgical means now in use for the treatment of this trouble are more or less familiar to all, so I shall confine my remarks this evening to the supplemental use of antiseptics in urethral surgery. In all surgical operations on the urethral canal, the most dangerous complication that can arise is what is known as urethral or urine fever, due to poison produced by the absorption of pent-up and decomposing urine in contact with the surgical wound. The epithelial lining of the canal being in its normal condition urine-tight, it necessarily follows that any breach in the continuity of this membrane robs it of its protective function, thereby leading to urine leakage and consequent urethral fever. The methods now in use as prophylactic measures against this dangerous complication are absolute cleanliness in re-

gard to instruments and parts to be operated upon, and thorough drainage. No surgeon should introduce any instrument into the urethral canal without first having washed out the canal with a carbolized solution, and this can be very readily and thoroughly done by means of the Keifer's nozzle. The instruments should also be thoroughly sterilized. So long as the parts can be kept in an aseptic condition, no untoward result need be expected, but the constant contact of urine with the parts operated upon makes it of vast importance that we use every precaution to prevent the decomposition of urine within the canal. To the accomplishment of this end the canal should be washed out both before and after the passage of an instrument. In regard to drainage, it is necessary to explain exactly what is meant by the term in this connection.

That urine fever is due to contact of urine with the urethral wound has been proven beyond a doubt by Mr. Harrison, whose views were given to the world in the January 14th issue of the *New York Medical Record*. He proved that so long as the wound was protected from contact with the urine absolutely no fever resulted, and, in substantiation of this conclusion, he cites a number of cases where futile attempts had been made to pass a catheter for the relief of retention caused by stricture, resulting in considerable laceration of the canal, where no fever followed so long as retention lasted; and he also noted that in those cases followed by retention of urine after operation of internal urethrotomy, the same absence of febrile symptoms was noted, but as soon as retention was relieved by catheterization, and urine came in contact with the urethral wound, the phenomena of urethral fever set in. The methods now in vogue as prophylactic and curative measures against urethral fever, have all alike the same object in view; first, the prevention of urine coming in contact with the urethral wound; second, to render all urine which must unavoidably come in contact with such a wound innocuous. Towards the accomplishment of the first end complete drainage of the bladder by means of median cystotomy is practiced, both as a prophylactic measure and as a curative after febrile phenomena have developed. Secondly, by the internal use of such drugs as tend to neutralize the urine before it reaches the part, and by the local use of antiseptic measures as preventives of harmful results from its contact.

I will close my paper by saying that median cystotomy can be easily and rapidly performed, and, in those grave cases of urethral fever, following sometimes the simple passage of a sound: as well as other operations on this tract, it offers the surest, safest, and most scientific means at our command for its relief and prevention. Again let me call your attention to the good resulting from the careful use of antiseptics in genito-urin-

any surgery. Too much care in this respect cannot be used, and I have on two occasions, within the last four months, seen grave septic cystitis follow from neglect in this regard. It was my intention when I began this paper to review the modern treatment of cystitis, but as my paper is already a long one, I will leave this interesting subject for another time.

FRIEDERICH'S DISEASE. REPORT OF A GROUP OF FIVE CASES.

Read before the Indiana State Medical Society, June 6, 1888.

BY EDWARD E. WELLS, M.D.,
OF SHELBYVILLE, IND.

I desire to record, chiefly for statistical purposes, the histories of five cases of that strange form of spinal sclerosis known as Friederich's disease. The patients, three males and two females, are members of a family consisting of father, mother, four sons and three daughters.

The father is a German, 69 years of age, and a blacksmith by occupation, although at present residing upon a farm. He has always been healthy, and there are no physical peculiarities about him worthy of note. Mentally he is retrospective, dislikes the trouble of reasoning, and is inclined to be inattentive to the matter in hand. He is one of a family of eight children, none of whom are known to have had any nervous disease, and the exemption has extended to their descendants so far as known.

The mother is also a native of Germany, and is about 60 years of age. For several years she has had attacks of neuralgia, affecting various nerves. Beyond this she has had no nervous symptoms. Both physically and mentally she is always ready, quick and active. Each of her seven brothers and sisters have raised families, but no form of nervous disease has been known to have invaded this side of the house. There is no blood relationship existing between father and mother.

Henry, the eldest child, when 18 years of age, first began to complain of fatigue, slight and uncertain pains in the back, and of difficulty of locomotion. His gait was staggering, and he would stumble frequently. These symptoms gradually increased in severity, so that at the end of four years his lower limbs became so weak, and were so inclined to become "tangled," that walking was very difficult. He could not stand or walk in the dark, or when his eyes were closed. Labor always aggravated his condition. At about this time he took a prolonged rest, with amelioration of his symptoms, and an apparent checking of the course of the disease. These benefits continued only so long as he remained idle, and the malady again became progressive on his returning to his home. As years passed his lower limbs

became more and more useless, ataxic symptoms spread to the upper extremities and the tongue, he lost flesh and strength, and was confined to his bed, and finally died exhausted in February, 1887, at the age of 32, and fourteen years after the commencement of his illness. From early youth he was always self-confident and egotistical, and as time passed these traits became more and more marked, until they became prominent features in his case. Not only had he ideas—and some of them were most peculiar—of his own, but he could ill brook contradiction or opposition, either by word or deed, knowingly or unwittingly. For example, if he saw a neighbor, or even an entire stranger, doing work by a method of which he did not approve, he would express his condemnation in the strongest terms, and sometimes even fly into a fit of anger about it, although the matter was not of the least concern to him. This mental trait may have had something to do with his early demise, inasmuch as he had imbibed the idea that dietetic errors were the cause of his malady, and that in the correction of these lay his only chance of cure. He, therefore, by a process of exclusion, reduced his food and drink to a very low point—finally to minute quantities of unleavened bread and boiled rain water. For a great many months he rigidly excluded salt from his diet.

Mary, the eldest daughter, 31 years of age, was married at the age of 20, and has two children, aged respectively 10 and 7 years. After four years her marital relations were severed. Since the birth of her youngest child she has suffered from irregular, generally too frequent, and profuse menstruation. Shortly after marriage she began to experience a sensation of weariness in the lower limbs, with, at times, incoördination of their movements. For a long time these were noticeable only after unusual exertion. The ataxic symptoms have gradually increased, and her present condition is certainly a deplorable one. Her mental faculties are unimpaired. Sight and hearing are perfect, and there are no gross alterations perceptible in the ocular fields. There is an Argyll-Robertson pupil. The tongue is protruded suddenly or by jerks. There is, at times, irregularity in the movements of the vocal cords, and the speech is hesitating and jerking. There are frequent attacks of naso-pharyngeal catarrh. The spine is painful, and pressure upon the spines of the lower dorsal and upper lumbar vertebræ causes pain, sometimes acute, and at others scarcely perceptible. There are no rectal or vesical symptoms. There is absence of the knee-jerk on both sides. The muscles react well under electrical stimulus. Electro-muscular sensibility is greatly impaired or absent, with little or no diminution of tactile sensation. Her gait is unsteady and staggering, and the lower limbs are paretic, and on exertion become quickly tired. She can neither

stand alone nor walk with her eyes closed. When walking she is compelled to keep her eyes steadily on the ground before her, in order to prevent falling. Ataxic symptoms, in a milder form, are also noticeable in the upper extremities, face and tongue. Her children remain free from any nervous manifestations.

Philip, the second son, is 29 years of age, and unmarried. Three years ago he first noticed weakness of the lower limbs, together with languor, and, at times, an uneasy sensation in the back. These symptoms have gradually increased in severity, and others have been added. At the present time his gait is noticeably ataxic, and he staggers when he attempts to walk with his eyes closed. He is able, however, to find his way upstairs and through a darkened room without a light, on going to bed at night. The patellar tendon-reflex is absent on both sides. When the Faradic current is applied to the lower limbs the muscles contract forcibly, but electro-muscular sensibility is absent. Tactile sensibility is unimpaired. There is spinal soreness, especially after active exercise, but there is no pain on pressure. There are, at times, muscular pains in various parts of the body. Eyes and throat are normal, but there is a slight impairment of hearing in the left ear. He has occasional palpitations, but the heart sounds are normal. The rectum and bladder perform their functions naturally. He is aware of a difference in sensation above and below the waist, but cannot describe it. His mental powers are good.

Jacob, the third son, is 26 years of age, and also unmarried. Eight years ago he first noticed weariness, heaviness in, and a difficulty in moving his lower extremities. At first these symptoms appeared only after fatiguing exercise, but they soon became constant, and gradually increased in severity. At the present time the paresis and incoördination of movements in the lower extremities are so marked, and his gait so uncertain and staggering, that he can get about with only the greatest difficulty. With closed eyes and unsupported he cannot stand. The knee-jerk is absent, but there are no rectal or vesical symptoms. The arms, face, tongue and throat are also markedly ataxic. His speech is slow, hesitating and jerking. The pupils do not respond to the light, but his sight and hearing are good, and he has not been troubled with soreness of the throat. Mentally he may be described as slow, a trifle dull, but very positive.

Kate, the youngest daughter, is 20 years of age, and has had ataxic symptoms for three years. She has never noticed much uneasiness or soreness in the back, her complaint being a gradually increasing weakness in the lower limbs, with consequent difficulty in locomotion. Her gait is now very unsteady and staggering, and she moves about with considerable effort. She cannot walk with

the eyes closed. There is an absence of the knee-jerk and of electro-muscular sensibility. Ordinary sensation is normal, and the muscles contract well under electrical stimulation. The rectum and bladder act well. Sight and hearing are perfect, but she has a chronic post-nasal and pharyngeal catarrh, with atrophic degeneration of the mucous follicles. Her speech is noticeably hesitating and jerking, and the muscles of the upper extremities and face are beginning to be involved. There is no impairment of her mental faculties.

Of this sorely stricken family the second daughter, aged 22, and the youngest son, aged 19, as yet remain unaffected.

TWO CASES OF ATROPINE POISONING.

Read before the Medical Society of the District of Columbia, March 28, 1888.

BY JAMES J. MCKONE, M.D.,
OF WASHINGTON, D. C.

Case 1.—Mary G., married, æt. 35 years, was using a solution of atropine in her child's eye. There were from 2 to 3 drachms of this mixture, containing from 1 to 1½ gr. of the alkaloid. She poured this solution into a tumbler and left the latter standing on a shelf. An hour or two later her husband came in with a pail of beer and, not noticing the colorless liquid in the bottom of the glass, poured his wife's share of beer in the tumbler with the poison. The mother at this time was holding her female child 2 years of age upon her knee and, giving the latter a mouthful or two of the beer, drank the remainder herself. I saw the patient fifteen minutes later at her home. She complained of dizziness, ringing in the ears and dryness of the throat. At my request the patient walked to the Emergency Hospital, a distance of one square.

On arriving at the hospital the pupils were found widely dilated, skin hot, dry and flushed, pulse rapid and respirations shallow. The stomach pump was at once used to remove any of the poison which remained, and for this purpose a quart of warm water was thrown into the stomach and then returned. This operation was repeated three times. During this procedure the patient, for the first time, was slightly delirious, the delirium being of a talkative nature, and this continued until coma set in a short time afterwards. The stage of excitement was very limited.

½ gr. of morphia was now injected hypodermatically into the arm, a large quantity of tannic acid given by the mouth, and the body sponged with iced water. Thirty minutes after admission the pupils were completely dilated, a small ring of the iris only being visible. The respiration was now very shallow, but not over 20 per minute. The pulse was 180 and very weak. The

first could not be distinguished from the second sound of the heart. Stimulants were now administered hypodermatically, brandy, ether and ammonia being used alternately. A mustard plaster was applied to the feet and over the heart, and friction of the extremities was employed. Under this stimulation the pulse became fuller, but there was a tendency to spasms of the muscles of the jaw and neck; this was relieved by a hot towel placed around the throat. About 6 ozs. of urine were now drawn.

At 10 P.M., two and one-half hours after the poisoning, the pupils were somewhat less dilated, the respirations deeper, the pulse 150 and weak. The patient could now be made to swallow, and 5 minims of tincture of digitalis were given and frequently repeated at short intervals. Hot bottles were placed around her. Carphologia and subsultus tenderness now presented themselves and lasted about an hour, when a tendency to general convulsions was observed.

11 P.M. The morphia now began to show its effect. There was itching of the nose, and the respirations became deep and 11 per minute; pulse 140, pupils contracting, skin moist and efflorescence diminished. Strong coffee was then given and the former stimulants repeated. The horizontal position was maintained throughout.

At 1 A.M., five and one-half hours after the ingestion of the poison, pulse 120, respiration 13. But little contraction of the pupils during the past two hours. All muscular spasm relaxed.

An hour later the patient became quite rational, but on account of the condition of her pupils, could not recognize her child lying about six feet from her. She now fell asleep and did not wake for four hours, when she had recovered, with the exception of the hypermetropia, which was quite severe for the two days following, and present, though to a less degree, the remainder of the week. Then she was able for the first time to read ordinary print without difficulty, held at the usual distance. Her recovery was ultimately complete, though a severe pharyngitis supervened.

Case 2.—Mamie G., 2 years of age, daughter of the last patient, as mentioned in previous report, received a sip or two of the poisoned beer. The father, who was taking care of her at the time, said she began to be affected soon after the mother, and gradually grew worse until midnight, when Dr. Koonen, at that time assistant resident physician in the Emergency Hospital, went to the house and found her unconscious. She was at once taken to the hospital. On admission her pupils were found widely dilated, tongue and pharynx dry, and a copious secretion from the nostrils which had existed from birth—the child being syphilitic—had completely dried up. The skin was almost of a scarlet color, dry and hot; the pulse and heart-beat so rapid and weak that they could not be counted. The respirations were

panting. Frequent short fits of laughing were present. The limbs of the child were scarcely quiet for a moment on account of muscular twitchings, and there were several attacks of opisthotonos of short duration.

Four hours had now elapsed since the poison was taken, and the child had received no treatment. Five grains of bromide of potassium with brandy were given by the mouth, and she was wrapped in towels wrung out in cold water, which seemed to influence the convulsive movements favorably. Iced water in teaspoonful doses was given from time to time and was always taken with avidity. On account of the length of time which had elapsed since the ingestion of the drug, no emetic was given, and no morphine or other opiate was employed. At the end of two hours the spasms had entirely disappeared. Slight tympanites appeared, for which ether and tincture of ginger were administered. From this time onward she recovered rapidly. There were no sequelæ, and no after-treatment was employed.

I report these two cases to this Society through the kind permission of Drs. Magruder and Lee, of the hospital staff, the latter of whom, at my request, saw the first case mentioned.

AN UNUSUAL LUXATION OF THE CRYSTALLINE LENS.

BY CHARLES W. KOLLOCK, M.D.,
OF CHARLESTON, S. C.

The position of the luxated lens, and the circumstances attending its displacement are unusual, and hence it seems worthy of recording. On the 14th of June last C. D., a boy of twelve years of age, was brought to me with the following history:

About three weeks ago the right eye became sore, the left following in turn a week later. Still a week later a tumor appeared in the lower corneal segment, which gradually increased in size. When first seen both eyes were in a state of purulent inflammation, which was beginning to subside, though the discharge was still quite profuse. At the lower portion of the right cornea was a tumor measuring fully one-third of an inch in its transverse, by one-fourth of an inch in the vertical diameters. Externally it was composed entirely of corneal tissue, extending below to the corneo-scleral junction, which it slightly overlapped; the color was dark, and evidently caused by the prolapsed iris, which was pressed against the inner surface. The pupil was elongated downward, and its lower edge wholly beneath the tumor. There were no signs of external ulceration visible, no history of a blow having been received, nor had he suffered particularly from pain.

The cause of the purulent ophthalmia could

not be learned, and as nothing could be done until the discharge was stopped, treatment was accordingly directed to that condition. In about two weeks all discharge of a purulent nature having ceased, it was decided to remove the dislocated lens, which was done under the influence of chloroform, by passing a cataract knife through the lower portion of the tumor. Comminuted lens substance was evacuated, and the vitreous humor presented in the gaping cavity left. The edges of the corneal wound having lost their resiliency, were drawn together by a silk suture, and united firmly in two or three days. A pad of absorbent cotton and tight bandage was applied, and has so much reduced the staphyloma that it is now nearly even with the surface of the cornea.

The interesting and unusual features of the case are as follows:

(1) That the cornea was softened without ulceration on its external surface; (2) that no blow is known to have been received; (3) that the pain accompanying the accident was very slight; and (4) the unusual position of the displaced lens, entirely beneath the cornea, not involving the sclera or conjunctiva. It seems almost certain that force of some kind must have started the lens from its normal position, and that the cornea being softened by the purulent discharge, it took the direction of least resistance and formed a tumor, the nature of which was by no means clear at the first examination.

MEDICAL PROGRESS.

ANTISEPTIC INCISION AND DRAINAGE IN LIVER ABSCESS.—DR. FRED. W. ALLWRIGHT records the following case, which is interesting from the large size of the abscess, and the slight constitutional disturbance it caused:

R. H., aged 27, had been in India for a period of four years. He had had dysentery, but never syphilis, and was of temperate habits. He consulted me for a swelling over the region of the liver, stating that he had previously been treated for enlargement of that organ and dyspepsia. I made a full examination. The tongue was furred and the bowels constipated. The liver was very much enlarged, and the dulness extended from the level of the nipple to about two inches and a half from the ribs. A little to the right of the ensiform cartilage there was a distinct swelling raised above the surrounding skin about a quarter of an inch, which was tender to the touch; he also complained of pain under the right shoulder. There was considerable bulging over the whole of the hepatic region. I diagnosed hepatic abscess. A mixture was prescribed, containing chloride of ammonium, a solution of potash, and nitro-mu-

riatic acid. I saw him a week afterwards, on September 14, when the tumor was slightly increased in size, and fluctuation well marked. I passed the needle of a hypodermic syringe into the tumor, and withdrew a syringe of flaky pus, intermixed with a chocolate-colored material. This was examined microscopically, but no "hooklets" were visible. I thought it might be hydatid disease. I determined upon using the aspirator, and accordingly did so on September 18, when twenty ounces of the same kind of material were withdrawn, which relieved the patient. After the operation there was no elevation of temperature, and no ill effects followed. There was no diminution in the dulness after the evacuation of the abscess; at least it was not perceptible. The mixture was continued, and the patient was fed on light, nutritious diet, and a pill containing a quarter of a grain of podophyllin administered every alternate night to regulate the bowels. No further treatment was adopted until the following November, when the bulging over the liver was found to be increased in size. The patient, making no progress towards recovery, was anxious to have something further done. An operation was decided upon. On November 21 chloroform was administered, and an incision made, with antiseptic precautions, about two inches in length from the ensiform cartilage, parallel to the last rib; this gave exit to about five ounces of pus, mixed with the same chocolate-colored material. A full-sized drainage tube was inserted, and the cavity of the abscess measured about six inches in depth. The wound was dressed with carbolyzed tow. The temperature was normal the evening after the operation, and never rose above 100.3° subsequently. The only complication that followed was a rather troublesome cough, but this gradually subsided. The discharge continued for two months after the operation, and from time to time there were several pieces of what appeared to be liver substance discharged through the drainage tube. The cavity of the abscess was washed out with warm iodized water (1 dr. of iodine to 8 oz. of water), and afterwards with a weak solution of iodized phenol. The cavity gradually contracted, and the greater part of the dulness disappeared. The subsequent progress was in every way satisfactory, and the recovery complete. At the present time the patient is in perfect health.—*Lancet*, July 28, 1888.

TREATMENT OF PNEUMONIA.—DR. C. R. LINGWORTH says: In my opinion the best guide to the treatment of pneumonia is not its after-history, but its pathology. There is (as in all inflammatory processes) stasis of the blood in the pulmonary capillaries, followed by effusion of inflammatory lymph into the air cells. The aim in treatment, therefore, should be to obviate stasis by giving remedies which prevent coagulation of

the blood, and with them also those which diminish the *vis a tergo*, so as to facilitate the passage of the stagnating blood through the capillary system. The old remedies for liquefying the blood were notably the carbonates of ammonia and soda; then there were those valuable remedies for that purpose, the salicylates of ammonia, soda and potash; and now we have a group of medicines which are even more powerful in that direction—the “antipyretic” group, including antipyrin, antifebrin, kairin, etc., etc., antipyretic solely in virtue of their power of dispersing stagnating blood, and thus of relieving tension in the circulation.

Those remedies which diminish the *vis a tergo* may be all described as cardiac depressants. They are digitalis, antimony, aconite, ipecacuanha and strophanthus.

In croupous pneumonia I give 10 grains of the salicylate of soda, and from 3 to 5 grains of carbonate of ammonia every two hours, with from 5 to 10 minims of the tincture of digitalis, and I frequently secure resolution in from eight to thirty hours. If by that time resolution should not occur, I prescribe the acetate of ammonia and digitalis, because it is useless to expect rapid resolution when the effusion of the febrin is complete, as in the stage of hepatization, and because the destruction of the febrin elements of the non-stagnant blood by the continued use of the salicylates, as indicated by their toxic effects, is not only inadvisable, but dangerous. I never give the salicylates in broncho-pneumonia, because, from abundant secretion, there is already deficient aëration, and consequently deficient fibrination of the blood. I give the acetate of ammonia, and for another reason; it is compatible with the perchloride of iron, in the event of the “pneumoparesis” of Dr. Richardson supervening, as it frequently does in cases of broncho-pneumonia and croupous pneumonia in patients with great cardiac debility. That powerful hæmatinic, of course, without any depressant such as digitalis, is then urgently needed, in full and frequently repeated doses. Iron in this form is also the best tonic in all cases of pneumonia and broncho-pneumonia, as soon as all sympathetic febrile disturbance has subsided.—*Lancet*, July 28, 1888.

MODERN CARDIAC THERAPEUTICS.—EICHHORST, in a very practical paper, gives some valuable hints regarding the more modern remedies in affections of the heart. Digitalis, he says, still holds the first place among these. It is of great practical importance that the remedy be given in conjunction with or immediately after alcoholic stimulants and excitants. Especially is this the case when marked cyanosis exists. Digitalis in those cases has no effect until the vagus center is stimulated by the administration of alcohol. When a quick effect is desired, the drug in the

form of powder should be employed. In certain forms of kidney disease the powder may prevent threatened attacks of anæmia. The powdered digitalis-leaves are very much increased in potency by the addition of calomel, not only in the dropsies of heart affections, but also in that occurring in emphysema, marasmus, and in liver disease. The author thinks that the cumulative effect of the remedy is exaggerated. He has given it for months without noticing any such effect.

Next to digitalis, according to the author, stands strophanthus. Comparing the two, he says that digitalis is quicker and more certain in its action, but that strophanthus has the advantage in showing no tendency to cumulation, and does not seem to lose its effect by long-continued use. Eichhorst has found strophanthus more efficacious in some cases than digitalis, especially in a case of exophthalmic goitre and in one of long-standing ascites. Sulphate of sparteine stands low in the list after the two foregoing drugs. It seems particularly applicable in cases of cardiac asthma. Next come preparations of caffeine, which have the advantage over the last-named drug from their diuretic properties. *Adonis vernalis* and *Convallaria maialis* have but very slight effect on the heart, and are uncertain diuretics. In addition, they are likely to cause nausea and vomiting.

Regarding Oertel's method the author expresses himself as follows: In all forms of cardiac weakness it is advantageous to diminish the quantity of fluid ingested; the amount of fluid allowed should always be in proportion to the quantity of urine excreted. In reference to bodily exercise one should observe the greatest caution. Violent exercise may cause overdistension of the heart, and consequent sudden death. This is especially likely to happen in cases of fatty degeneration of the heart muscle. On the other hand, in cases of retarded action of the heart, from the accumulation of subpericardial fat, methodical exercise is advantageous in freeing the heart from its mechanical burden.—*N. Y. Med. Jour.*, Aug. 4, 1888.

LAPAROTOMY FOR TUBERCULAR PERITONITIS.

—At the present day, says HERMAN KÜMMELL, we are justified in regarding tuberculosis of the peritoneum as a local disease in the vast majority of instances, and like tuberculosis of the bones and joints, it may be cured by surgical means. His experience, supplemented by the numerous contributions of others, show that it is curable, or at any rate, capable of existing for many years without symptoms or disturbance of the patient's health. Kümmell tabulates 40 cases of peritoneal tuberculosis treated by operation, including two of his own. Out of this number only two died of the effects of the operation (Naumann's), apparently of septicæmia, the others recovered promptly. The duration of the cure varied from 25 years to a few months. In some cases, as for

example that of Koenig, in which there was a co-existing pulmonary tuberculosis, a fatal termination took place within a year. In Hegar's and Breisky's cases the symptoms of the complicating lung trouble were still present at the time of the report, although the patient's general health was quite satisfactory, and no local appearances (ascites) had occurred. In the other cases the patients returned to comparatively good health; there was a considerable increase of bodily weight; the ascites did not recur, and in some even the pulmonary trouble subsided.

The greater number of operations were in females, the age varying from 4 to 56 years. An error in diagnosis was frequently made, and in consequence an operation performed, the disease being mistaken for an ovarian cyst, fluid, abdominal tumor, etc. In some instances an operation was undertaken to decide a doubtful diagnosis. In the author's two cases, the tuberculosis was accidentally discovered during laparotomy for ileus. In only a few cases was the disease diagnosed, and the operation systematically resorted to as a curative measure.

The objective signs of the peritoneal tuberculosis were generally those of encapsulated ascites, of cystic character. Rarely was the disease associated with general tuberculosis, and in no case was the development of the latter hastened by the operation. It is difficult to imagine why a laparotomy should be followed by these favorable results. That the antiseptic employed was not the curative agent is shown by the fact that in some of the favorable cases nothing was done beyond removing the ascites and suturing the wound. It must be admitted that the disease sometimes shows a disposition to spontaneous cure, as is shown by two of Græfe's cases.—*Langenbeck's Archiv*, Bd. 37, Hft. 1, 1888.

THE THIRD STAGE OF LABOR.—DR. A. H. F. BARBOUR, at the conclusion of a criticism of papers by Cohn, Champneys, and Berry Hart, concludes as follows:

1. The question of separation of the placenta must be kept quite distinct from its expulsion.
2. Evidence is accumulating that, at the commencement of the third stage, the placenta is still as a whole or in great part attached.
3. Diminution in area of its site to 4 in. by 4½ in. does not mean separation of the placenta.
4. Diminution in area beyond that + the action of the uterus as a whole on the placental mass, I regard as the formal cause; the pains of the third stage as the efficient cause of separation. Blood effusion is an accident, *i.e.*, not essential.
5. During the contractions of the third stage the surface of the placenta is thrown into heights and hollows; the heights do not necessarily mean effusion below.
6. The placenta descends usually with its edge

or a point near its edge first, as Duncan described; sometimes foetal surface first, as Baudelocque and Schultze described.

The third stage I regard as a second labor in miniature. After the pain that expels the child comes a pause, during which the placenta is still as a whole or in great part attached; then labor comes on again, and the placenta is first detached and then expelled. This second labor is not always marked off by a distinct interval from the first, sometimes one long pain expels the child and then detaches and expels the placenta.—*Edinburgh Medical Journal*, August, 1888.

HYPODERMIC INJECTION OF ANTISEPTIC SUBSTANCES IN PULMONARY PHTHISIS.—A. FILLEAU and LEON PETIT record the benefits they have obtained from the subcutaneous injection of carbolic acid in pulmonary phthisis. They make use of solutions of two strengths, *viz.*: a 1 per cent. solution of absolute phenol in distilled water; and a 2 per cent. solution of absolute phenol in distilled water. If the phenol be pure, no accident need be feared, provided the injections be made slowly and the solution gently warmed. The dosage varies from 10 c.c. of either solution per week to 10 c.c., 15 c.c., and even 25 c.c. per day. No accident is recorded, and evidence of intoxication, except in slight degree and slowly produced, has not been obtained. The first indication of an overdose is frontal headache. When the manifestations of scrofula are present, the authors recommend the following:

| | |
|---------------------------|----------|
| R. Iodine | 12 parts |
| Potass. iodid., | 3 " |
| Phenol absol., | 10 " |
| Aq. distillat., | 1000 " |

Of this solution the dose is the same as of the other two. The authors further suggest formulæ similar to those of Dr. Meunier, whereby phenol may be injected in more bland solution.—*Bulletin de la Phthisie Pulmonaire*, No. 4, May, 1888.

ACTION OF ANTISEPTICS IN TUBERCULOSIS.—DR. A. YERSIN has found that tubercle bacilli are killed in thirty seconds by 5 per cent. solutions of carbolic acid, in one minute by 1 per cent. solutions, in five minutes by absolute alcohol and 1 per cent. solutions of iodoform, in ten minutes by ether and 1 per cent. solutions of corrosive sublimate, in three hours by thymol, in six hours by 2.5 per cent. of salicylic acid. On the other hand, boric acid in 4 per cent. solution in creasote water manifested no germicidal properties in twelve hours. It was also determined by the author that a temperature of 70° C. is capable of destroying the bacillus in ten minutes, while a temperature of 60° C. has no influence. In this respect Yersin's results differ from those of Schill and Fischer, who had noticed a much longer resistance of the bacillus to the action of heat.—*Annales de l'Institut Pasteur*, No. 2, 1888.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 1, 1888.

THE ETHICS OF MARRIAGE.

In his "Ethics of Marriage" Dr. H. S. POMEROY, of Boston, discusses in a masterly manner questions that it is proper the physician should call attention to, though of concern to the whole people. It is, in effect, an appeal to the rank and file of Americans to cast away the loose and false ideas of marriage that have gained too great a hold on the minds of some, and an appeal to others to correct their false standards of modesty. And inasmuch as it is impossible to write of the sins against parenthood without constantly referring to the woman question, and to what concerns woman's education and work, Dr. Pomeroy has much to say of these things.

We Americans, says the author, are an intense people; when we act we act intensely; the ignorance of the first principles and rules of parenthood is intense. Strangely enough, says Mr. Herbert Spencer, the most glaring defect in our programmes of education is entirely overlooked. Though some care is taken to fit youth of both sexes for society and citizenship, no care whatever is taken to fit them for the still more important position which they will ultimately have to fill—the position of parents. And how little care is taken to fit them for the equally important position of producers of children! We know that all reference to such subjects is tabooed in that inscrutable compound called "good so-

ciety." But there are so many and so good reasons for a candid and careful consideration of these matters as to require surrender of reserve and breach of reticence, without at all breaking down or impairing our standards of purity, refinement, delicacy, or modesty. Dr. Pomeroy's book is one that appeals especially to the lay public; but we believe that this class is more likely to read and study such works when recommended by physicians, at least that portion of the laity that believes that the physician has a further interest in human kind than the mere collection of fees for services rendered professionally.

Even when we would shut our eyes to the glaring defects in our matrimonial ethics, and would keep our lips sealed against conversation on the subject, the facts that we would hide are being constantly thrust upon us. The young woman that poisons her mind with the latest piece of pruriency in yellow, the French novel, before marriage, and that prevents conception until she becomes pregnant "accidentally" or so deranges her system that she cannot become pregnant, or that carries her pug in the street while not knowing where her baby is, is violating the ethics of marriage, the laws of nature, and the dictates of common sense—for the two last include the first. Every one that has common sense, or that will admit the existence of laws of nature, must admit that the primary object of marriage is the propagation of the race. Not only this, but also the care and rearing of the offspring. For the first it is not absolutely necessary that there be marriage; without marriage the second is impossible. Obviously then, those that are unwilling or unfit to assume the care of offspring should not marry. Yet almost every physician must have in his mind examples of those that wishing to marry, but unwilling to rear children, have consulted him as to the best mode of carrying out their wishes. And assuming that none that wish to avoid becoming parents can carry out their wishes, but must have children unintentionally, would not this unwillingness tend to incompleteness of offspring? Admitting that the laws of heredity would not intervene to produce an incomplete foetus, are the chances in favor of this "creature of accident" being reared properly, and receiving proper parental attention?

The sins of which we speak, the ignorance of

parenthood, the means employed to prevent conception, and the practice of criminal abortion, are not committed by the Jews and Catholics to anything like the degree that they obtain among the Protestants; so says Dr. Emmet, and he if any one is entitled to belief. Every Jew and every Catholic is taught the duties of married life. The Catholic is taught to believe that marriage is a sacrament, and the slightest deviation from such a belief and all pertaining to it is regarded as a mortal sin. While it is the duty of physicians to call attention to these transgressions against the laws of nature, they can accomplish nothing unless they invoke the aid of Protestant clergymen. It is not the business of the physician to preach. When he sees people flying in the face of common sense and natural laws, even those that are ever ready to attribute every calamity to a visitation of Providence instead of the outcome of folly, it is his business to utter the warning; it is equally the part of the minister to impress that warning on the minds of the people. Families and nations do not disappear from the earth by accident, but because nature becomes disgusted with them, and rids the world of them and their contaminating influence. Does it seem strange that in the majority of cases the families that disappear from the face of the earth, or that are beginning to disappear, are those that have reached what the world calls wealth and culture? Do they not begin to decay because they have passed the period of usefulness, when wealth and culture are looked upon by them only as the means for purchasing idleness and dissipation?

No one ever uttered a more true sentiment than Dr. Pomeroy, when he says that a pound of preform is worth a ton of reform. Society and the State are absolutely dependent upon the family relation for the proper conditions for the generation of the individual. We cannot have a healthy, wholesome society without a healthy wholesome family relation; without the two we cannot have a healthy, wholesome State. Can the mind conceive of a healthy, wholesome State composed of celibates? Can it conceive of such a State in the future without children in the present? Even where our family relations are not loosened by the establishment of a divorce day in the courts, they are being loosened by our notions (we cannot call them ideas) of the marriage

relation. A people cannot attain to the highest position in intelligence and morality that makes the marriage tie less binding than it should be, and that does not jealously guard it against any and everything that may tend to weaken it. One thing that seems peculiar to America, and that must inevitably have a tendency to lower our ideas of marriage into notions, is the peculiar custom of boarding of married people, instead of having a home. A boarding house or a hotel can never be a home, since in these places there can never be that amount of the high work of woman that is essential to the making of a home, nor can children be surrounded by all those influences that go to make the complete home and family. A child cannot be reared in a boarding house to be that complete human animal that makes the complete citizen. In such a place there cannot be that preformation of the child that is so much better than reformation.

Americans are in need of preformation in regard to their ideas of what is indelicate and immodest. Total reformation of the present generation we can hardly expect. We are applying ideas of preformation to the breeding of domestic animals; how much more should they be applied to the rearing of children, in order that they may be healthy and wholesome, and be adapted to the service of the State. Good lessons well learned early in life have a salutary influence over the whole life, keeping the life more pure, the body more free from preventable ills, and the mind free of actual and imaginary ills. Unless these lessons are taught they are self-learned and badly learned. If the seed of character be sown at nineteen we cannot reasonably expect a harvest at twenty-one; if they are never sown, how can any sane person expect a return at all? It is not unfrequently the case now that young married people think they owe an apology to society for having brought a child into the world, and often attempt to explain the remarkable fact by letting people know that they did their best to prevent such an occurrence. We do not exaggerate; every one that knows anything of American society in cities (at least) knows that there are very few married people that do not or have not discussed methods of preventing conception, and the majority of physicians will have no difficulty in remembering instances in which they have been consulted on this subject. It must be said that in very many cases people do

not know that there is anything wrong in this, or in procuring the death of the foetus "before the time of quickening." Many are astonished when told that destruction of the foetus at any time after conception is murder. This shows faulty education. The people need to be educated in regard to such matters, and the education should begin with the child, and the parent of the child.

It need not be replied that we cannot convince irreligious people of the truths that should be inculcated. Every sane person, religious or irreligious, recognizes that there are certain laws of nature that cannot be broken with safety to the individual. There is no difficulty in bringing any thinking person to believe that nature is a strict accountant, which strikes no false balances. We need only point out the danger to the individual of interfering with the normal processes of nature. Many believe that there is less danger to the individual in an abortion than in allowing pregnancy to go to full term. To convince them of the contrary, we need but point out Dr. Pomeroy's illustration of plucking unripe and ripe fruit from the tree. The ripe fruit may be plucked without exertion on our part, and without injury to the branch, but not so with the former.

Most of our States have statutes relating to the punishment of performing or attempting to perform abortion, and for advertising or selling the means for procuring abortion. Some of the States have statutes for punishing the advertising of or selling or possessing the means for preventing conception. New Mexico, New Jersey, South Carolina, Texas, and the District of Columbia have no laws relating to the punishment of attempts to perform abortion. In case of the death of the mother Illinois is the only State that prefers a charge of murder against the offender (murder in the first degree). The States and Territories that do not punish the advertising or selling means for procuring or performing abortion are: Alabama, Arizona, Colorado, Dakota, Georgia, Idaho, Iowa, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New Jersey, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Washington Territory, West Virginia, Wisconsin, Wyoming Territory, and the District of Columbia. The only States that punish the advertising of or selling means for prevention of conception are California, Indiana, Kansas, Mas-

sachusetts, Michigan, Nebraska, New York, Ohio.² Two things almost every one knows: The laws are not enforced; they never will be enforced unless the public is made to see the necessity of enforcing them. Further, not only should the advertiser and seller be punished, but the advertising of means for performing abortion or for preventing conception should be punished. An attempt should be made to have laws throughout the country that are to some degree uniform. Of what value is an Illinois law for the punishment of offenses, when the offenses may be committed by parties in the next State, who advertise in Illinois papers? If the people of a State hold a certain thing to be a crime, punishable in a citizen of the State, should not the newspaper proprietor that advertises that there is a person in another State that does this thing be punishable. The three States, Illinois, Indiana, and Michigan, respectively, punish the selling of medicines for females exclusively, selling or advertising medicines with caution to the married, and for advertising medicines in ambiguous language. But persons living in any one of the three dozen other States may advertise such medicines, in whatever language they choose, in the papers published in these three States, so that the laws are practically inoperative. Thus the artificial division of our country proves a shield for persons that in other countries could not escape just punishment. Legislation, as we know too well, is not to be had for the asking, but let us at least ask for what is necessary for the protection of the people and of the very foundation of the State—the home.

TRAINED NURSES IN THE COUNTRY.

To undertake any argument as to the value of trained nurses at the present day would be scarcely less than a reflection on the intelligence of the reader. To present arguments to show that trained nurses are preferable in every respect to the old-style omniscient female, often the bane of the sickroom and generally the *bête noir* of the physician, would be as much of a reflection on the reader's intelligence. Even the public is beginning to learn that trained nurses are invaluable in cases of sickness—and when the public begins to learn a truth one may be sure that it is a truth of long standing.

² According to the table given by Dr. Pomeroy.

parenthood, the means employed to prevent conception, and the practice of criminal abortion, are not committed by the Jews and Catholics to anything like the degree that they obtain among the Protestants; so says Dr. Emmet, and he if any one is entitled to belief. Every Jew and every Catholic is taught the duties of married life. The Catholic is taught to believe that marriage is a sacrament, and the slightest deviation from such a belief and all pertaining to it is regarded as a mortal sin. While it is the duty of physicians to call attention to these transgressions against the laws of nature, they can accomplish *nothing unless they invoke the aid of Protestant clergymen*. It is not the business of the physician to preach. When he sees people flying in the face of common sense and natural laws, even those that are ever ready to attribute every calamity to a visitation of Providence instead of the outcome of folly, it is his business to utter the warning; it is equally the part of the minister to impress that warning on the minds of the people. Families and nations do not disappear from the earth by accident, but because nature becomes disgusted with them, and rids the world of them and their contaminating influence. Does it seem strange that in the majority of cases the families that disappear from the face of the earth, or that are beginning to disappear, are those that have reached what the world calls wealth and culture? Do they not begin to decay because they have passed the period of usefulness, when wealth and culture are looked upon by them only as the means for purchasing idleness and dissipation?

No one ever uttered a more true sentiment than Dr. Pomeroy, when he says that a pound of preform is worth a ton of reform. Society and the State are absolutely dependent upon the family relation for the proper conditions for the generation of the individual. We cannot have a healthy, wholesome society without a healthy wholesome family relation; without the two we cannot have a healthy, wholesome State. Can the mind conceive of a healthy, wholesome State composed of celibates? Can it conceive of such a State in the future without children in the present? Even where our family relations are not loosened by the establishment of a divorce day in the courts, they are being loosened by our notions (we cannot call them ideas) of the marriage

relation. position in the marriage and that d and everyt thing that must inevit ideas of ma custom of be having a hon can never be can never be woman that is nor can childr ences that go family. A child house to be th makes the com there cannot be that is so much b

Americans are i to their ideas of w Total reformation can hardly expect. \ mation to the breedi much more should th children, in order th wholesome, and be ac State. Good lessons have a salutary influ keeping the life more from preventable ill, an and imaginary ill. I taught they are self-lea If the seed of character cannot reasonably expect: if they are never sown, h expect a return at all? It case now that young marri owe an apology to society i child into the world, and ofte the remarkable fact by lettin they did their best to prevent: We do not exaggerate; every anything of American society i knows that there are very few m do not or have not discussed met ing conception, and the majorit will have no difficulty in rememl in which they have been consulted. It must be said that in very many c.

judgment was affirmed, though the judge admitted that there was a great difference among the bench and bar of the State as to the interpretation of the law. Mr. Williams then took the case to the Supreme Court of the State in order to finally settle in Missouri whether the physicians and druggists of the State can be deprived of the right to prescribe and dispense as a medicine what may be forbidden as a beverage. The Supreme Court reversed the decision, holding that under the local option law druggists have a right to fill prescriptions calling for alcoholic liquors. Physicians and druggists in local option places will feel relieved that this question has been settled by a high court, since in some places a great deal of annoyance and inconvenience has been caused by it.

EDITORIAL NOTES.

THE BACILLUS LEPRÆ.—DR. BEAVEN RAKE, Superintendent of the Trinidad Leper Hospital, has just made a report to the Scientific Grants Committee of the British Medical Association of his "Cultivation Experiments with the Bacillus Lepræ," some of which extend over nearly four years. His conclusions are: 1. At a tropical temperature and on the ordinary nutrient media, he has failed to grow the bacillus lepræ. 2. In all animals yet examined he has failed to find any local growth or general dissemination of the bacillus after inoculation, whether beneath the skin, in the abdominal cavity, or in the anterior chamber. Feeding with leprous tissues has also given negative results. 3. He has found no growth of the bacillus lepræ when placed in putrid fluids or buried in the earth. Dr. Rake says, however, that an inquiry of this kind is practically endless, so varied are the conditions of temperature, time, nutrient media, living animal tissues or putrescent substance, and so many are the observations necessary to avoid or lessen the risk of errors of experiment.

BOARD OF EXAMINERS OF NORTH CAROLINA.

—In 1886 there were 63 applicants for license before this Board; 17 were rejected—26.99 per cent. In 1887 there were 48 applicants; 14 were rejected—29.17 per cent. Of the 34 that passed the examinations 32 were regular graduates. Of the 14 that did not pass 8, or 59.14 per cent., were graduates. In 1888 there were 53 applicants; 17, or 32.07 per cent., failed to pass. Of the 36 that

passed 35 were graduates. Of the 17 rejected 12, or 70.58 per cent., were graduates. In 1887 and 1888 there were thus 101 applicants, 87 graduates and 14 non-graduates; 22.98 per cent. of the graduates failed to pass, while 78.57 per cent. of the non-graduates failed. At the meeting of this Board in May, 1888, it was decided that in future examinations of applicants shall be in writing, and the standard 70 per cent. Of the 36 applicants licensed at the May meeting of the Board, 2 were colored.

SEWAGE DESTROYERS NUISANCES.—A case of some public interest was recently tried in Liverpool. The plaintiff was the owner of some property adjacent to which the corporation of Blackburn had erected a destructor for burning the sewage of the town, and against the use of which he sought an injunction, alleging that the process was a nuisance to him and his tenants and injurious to his property. After consultation the case was settled by arbitration, judgment being given to defendants on the claim, but they to make certain alterations in the destructor, and to pay costs for the plaintiff.

OVER-CROWDING OF THE PROFESSION IN DENVER.—Says the *Denver Medical Times*: "The hotels, saloons, and even private houses of the city are littered, at the present time, with what pretends to be medical literature. The daily and weekly newspapers are filled with lengthy advertisements of quacks and charlatans. To a certain extent, these are the outgrowths of the overcrowded condition of the profession. What will the remedy be?" Higher preliminary education, higher standard of medical education, and a good medical practice act.

A QUINQUENNIAL CENSUS.—The Council of the Statistical Society of Great Britain has memorialized the Local Government Board in favor of a quinquennial census, as is the practice in almost all European countries, and in New Zealand, Queensland, Manitoba, and the North-West Territory of Canada, and in some of our own States and Territories. From the standpoint of public health, the quinquennial census is certainly preferable to the decennial, and it would be well if the former could be universally adopted in this country.

"BOBTAIL" CARS.—In the case of Mrs. Levy,

ing daily. A large pyriform mass, cystic and fluctuating, occupied the left flank and extended upwards under the ribs. In the right flank was another cystic tumor, only more rounded and smaller. Fluctuation was easily elicited in some axes of the whole mass. Vaginal examination showed the usual signs of pregnancy. The swelling rapidly became barrel-like in contour and the patient's condition grew steadily worse. As the tumor was bipartite and asymmetrical, as no uterine contractions could be felt and no foetal heart sound heard, Mr. Reeves decided to make an exploratory abdominal section. A median incision exposed an asymmetrical tumor, which was entirely uterine, blocking the pelvis and extending up to the ensiform cartilage. With great difficulty the wound was closed, and taking into consideration the daily increasing distension, the paper-like thinness of the uterine wall and the acute distress of the patient, the os was dilated, the membranes ruptured, and from the uterus several gallons of amniotic fluid were evacuated, along with twins of about four to five months foetal life. The uterus contracted, the abdominal incision was at once freed from strain and no uterine hæmorrhage ensued. Intra-uterine douches of iodized water were daily used and the puerperium ran an ordinary course. The temperature on the fourth day rose to 104° , but eventually the patient reported herself as having made a satisfactory recovery.

The Queen has appointed a provisional committee for the purpose of organizing a scheme for establishing with part of the Woman's Jubilee Fund a system of nursing the sick poor in connection with St. Katharine's Hospital. The Duke of Westminster, Sir Rutherford Alcock and Sir James Paget, who have already given much time and consideration to the matter, will still continue to control and help to elaborate the scheme. It is stated that Mr. Rathbone, M.P., who has already modelled a Nurse Training Institute at Liverpool at a private expenditure of £20,000, has promised his assistance to the committee.

Dr. Thorne Thorne has published in book form his inaugural address, delivered by him before the Epidemiological Society under the title of "The Progress of Preventive Medicine during the Victorian Era." It gives an admirable account of the growth of knowledge as to zymotic diseases during the last fifty years. The author traces the effect of the various Acts of Parliament concerning vaccination on the community, and shows the saving of life which has been effected as the result of them. He especially dwells on the advantages which accrue to children by compulsory vaccination in infancy, and gives the results of compulsory revaccination in Germany. The volume is an admirable *résumé* of all that is known concerning the causation of epidemic maladies.

A new preparation known as iodized oil is being

well spoken of. It is stated to be a solution of pure iodine and to contain 10 grains of iodine to each fluid ounce. The iodine does not, however, exist in a free state, but in a combined form, and hence causes no discoloration of the skin when applied as a paint or as a liniment. The so-called oil is useful in all cases in which the employment of tincture or liniment of iodine is indicated, excepting where strong counter irritation is required. It is mixable with spirit or water, so that when necessary its strength can be increased by the tincture of iodine or diminished by the addition of water.

The Formation of a Cremation Society for Manchester has been determined upon at a largely attended meeting held in that city. A provisional committee has been appointed. A list of about 60 persons favorable to the movement was submitted, including several clergymen, medical men, and others. A large number of ladies have joined the Society.

A Hindoo woman is now studying medicine at Edinburgh. She is the first Hindoo woman that has ever come to Great Britain for that purpose.

In the City of London Court a lady was sued for the value of a set of false teeth, but she refused to pay on the ground that they did not fit, and the jury decided this was so, with the result that the dentist did not get his money.

G. O. M.

DOMESTIC CORRESPONDENCE.

Electrolysis in Stricture.

Dear Sir:—Like my friend Dr. J. D. Thomas, of this city, whose paper on the treatment of urethral stricture by electrolysis appeared in THE JOURNAL of August 11, I, a few months ago, purchased the apparatus and entered upon the treatment of a few cases of that affection.

The following is an abstract of the record of one case: Wm. S., the subject of multiple stricture of the urethra, the result of gonorrhœa contracted thirteen years ago, had been treated for some time with conical steel sounds with comparative success. Before electrolysis was begun the narrowest point existed at $2\frac{1}{2}$ inches and permitted the passage of 18 French olive bougie. The séances were eight in number and one week apart. They lasted from five to fifteen minutes, and the strength of current used was from six to nine cells. There was neither hæmorrhage nor pain at nor after any application. The negative pole was attached to the insulated bougie and the positive to the sponge electrode.

The result of the seven weeks' treatment was decidedly unsatisfactory. A large inflammatory nodule had formed about the seat of stricture, and the latter had contracted so that a 16 French bou-

gie would not pass. The stricture continued to contract after the discontinuance of the treatment, and dilatation was again resorted to.

This case was treated strictly after the methods so clearly prescribed by the exponents of electrolysis, and there is no question in my mind that the patient was seriously injured by it. I treated other cases simultaneously by the same method without good results but, fortunately, did them no harm. The articles which have so strongly endorsed this treatment give little or no suggestion of possible mischief, and my experience would lead me to believe that more prominence should be given to this phase of the subject.

Yours truly,
Pittsburgh, Pa.

JOHN J. BUCHANAN, M.D.

MISCELLANEOUS.

AMERICAN RHINOLOGICAL ASSOCIATION, Sixth Annual Meeting, to be held at Gibson House, Cincinnati, Ohio, September 12, 13 and 14, 1888. The following papers will be read:

Chorea of the Soft Palate, caused by the Hypertrophy and Hyperæsthesia of the Mucous Membrane Covering the Posterior Part of both Inferior Turbinate Bodies. By J. E. Shadle, M.D., St. Paul, Minn.

A Short Criticism of the Prevalent Methods of Treating Diseases of the Upper Air Passages. By R. W. Wilcox, M.D., New York City.

Paper. By J. W. Compton, M.D., Evansville, Ind.

Paper. By Robert Levy, M.D., Denver, Col.

Etiology and Pathology of Nasal Diseases. Opened with a Paper by Thos. F. Rumbold, M.D., St. Louis, Mo. Etiology and Pathology of Acute Catarrh of the Upper Air Passages, by J. G. Carpenter, M.D., Stanford, Ky.

Conditions that Develop Naso-Pharyngeal Diseases. By N. R. Gordon, M.D., Springfield, Ill.

Paper. By H. Christopher, M.D., St. Joseph, Mo. *Relation of Nasal Diseases to other Diseases, Including the Brain and Nervous System.* Opened with a Paper by John North, M.D., Keokuk, Iowa.

The Effect of Nasal Inflammation on the Mind. By Thos. F. Rumbold, M.D., St. Louis, Mo.

A Case of Epilepsy Yielding to (apparently cured by) Treatment Directed to the Naso-Pharynx. By E. L. Sessions, M.D., Hillsboro, Texas.

Tuberculosis of the Nose, Mouth and Tongue. By R. S. Knode, M.D., Fort Wayne, Ind.

Treatment of Nasal Diseases by Local and Constitutional Medication. Opened with a Paper by A. DeVilbiss, M.D., Toledo, Ohio.

The Galvano Cautery in the Treatment of "Catarrh." By E. R. Lewis, M.D., Crawfordsville, Ind.

Local and Constitutional Treatment of Acute Catarrh of the Upper Air Passages. By J. G. Carpenter, M.D., Stanford, Ky.

Paper. By Frank M. Rumbold, M.D., St. Louis, Mo. *Surgical Means in the Treatment of Nasal Diseases.* Opened with a Paper by Thos. F. Rumbold, M.D., St. Louis, Mo.

The Removal of Gummatous Growths from the Nasal Cavities by Surgical Procedure. By A. G. Hobbs, M.D., Atlanta, Ga.

Surgical Treatment of Nasal Catarrh. By A. B. Thrasher, M.D., Cincinnati, Ohio.

Nasal Intubation. By J. A. Stucky, M.D., Lexington, Ky.

Hay Fever (Pruritic Rhinitis), Pathology and Treat-

ment. Opened with a Paper by P. W. Logan, M.D., Knoxville, Tenn.

What is Hay Asthma? Is it a Pathological Misnomer. By J. W. Fink, M.D., Hillsboro, Ill.

Hay Fever Cases. By E. R. Lewis, M.D., Crawfordsville, Ind.

Are Mechanical Means ever Curative *per se*. By Thos. F. Rumbold, M.D., St. Louis, Mo.

POISONOUS EFFECTS OF TIN SALTS.—The following is from a recent issue of the *English Mechanic*: Dr. Leonard W. Sedgwick says that the harmlessness of the salts of tin other than the chlorides is generally taken for granted, but the following facts appear to show that the assumption is incorrect: "In October, 1886, I saw nine persons in one well-managed, healthy household simultaneously suffering from watery diarrhoea, sickness and great pain in the abdomen. A close investigation served to show that, excluding the water they drank (which was pure) and the air they breathed (which was free from drain contamination), there was one thing, and one thing only, they had done in common, and that was the eating of pears stewed in a newly tinned copper pan. It came out, too, that many of them had suffered from two or three similar attacks on previous days, and that these attacks all occurred on days when they had eaten stewed pears. I therefore obtained some pears to cook, and, on testing the juice, found it laden with tin salts but containing no copper. That the diarrhoea gave way in a short time to simple remedies, that the drainage and the water supply of the house were perfect, that the eating of the stewed pears preceded on the same day each attack of illness, and that pears similarly stewed were found to contain large quantities of tin salts, were to my mind conclusive, if circumstantial, evidence that the attacks of the diarrhoea were caused by the tin salts. And then occurred the thought that, if the cooking of a somewhat acid fruit for a short time in a tin vessel effected the formation of a poisonous salt of tin, the keeping of an acid fruit for months in a tin can must have a like result. I therefore tested the contents of cans of apricots, pineapples, peaches and tomatoes, and in every instance found a large amount of a salt of tin. In this I was confirmed by my friend Mr. Hugh Power, who also in one specimen detected a salt of zinc. Since then I have seen several instances where painful diarrhoea followed the eating of a tinned fruit, especially in one case where tinned pineapple was eaten by several persons, who all suffered in like manner. And so I am compelled to believe that many cases of casual and unexplained nausea and diarrhoea are caused by the use of tinned fruit. Indeed, since the occurrence of the cases in 1886 I have lost no opportunity of relating these things to my personal acquaintances and of advising the use of bottled fruits only."

DOCTORS' BILLS.—The medical fraternity of Johnson County, Mo., adopted the following resolution: "After January 1, 1888, no account will be allowed to run more than six months from date of first visit, without settlement. All accounts are due when services are rendered. Parties who are in the habit of running bills for one year to another without paying, must continue to employ their former physician until he is paid. All pay cash for every visit in advance to the extent of the bills excepted." The State Society of Arkansas has adopted a similar rule, and the law sustains them. It is a mercy to the people by compelling them to pay a physician long enough to give the patient a thorough course of treatment, as well as to pay their honest debts?—*Denver Medical Times*, Dec. 18, 1887.

BANK NOTES AND INFECTION.—It is a common error to attribute a point of some sanitary interest in connection with the use of a paper currency, namely, the preference of infectious diseases to the use of bank notes.

with somewhat alarming realism on the mischievous power possessed by the dirty notes for small sums which are common in some foreign countries. In a like strain he deals with the well-thumbed £1 notes so familiar in the sister kingdom of Scotland. Greasy, discolored, and old, he seems to trace them passing from hand to hand and class to class, avoiding no form of illness but escaping all measures of disinfection. The question thus opened is indeed to some extent a practical one, and there certainly is, from the medical standpoint, more to be said in favor of a frequent issue of new notes than of the continued circulation of old and dirty ones. The velvet softness of a well-used note is familiar to many of us, and it suggests the distinct advantage of using in the exchange of money some smooth and crisp form of paper upon which the germs of disease would be less likely to establish themselves. No form of paper money can of course be purged from all such injurious influences, but there is no doubt that cleanliness even in this matter is in keeping with sanitary rule.—*Lancet*, Aug. 11, 1888.

THE YALE THERMOMETRIC BUREAU.—The Thermometric Bureau established in 1880 in connection with the Observatory of Yale University is accomplishing a work which physicians ought to appreciate. It has examined a gradually increasing number of thermometers during the years of its existence, but its usefulness is not measured by the number of instruments that pass through its hands. There is from year to year an improvement in the quality of instruments of American manufacture submitted for verification, both actual and relative to foreign manufactures, and the Observatory claims a share of the credit for this improvement.

"It may now be fairly said—as it could not have been said before the institution of this Bureau—that the best clinical thermometers of American manufacture compare favorably with the best foreign manufactures, both in the smallness of the amount of the required corrections and in their uniformity throughout the scale." Such was the statement of the managers of the Observatory in their last year's report, and this year they find occasion to say that their good work is still progressing.—*Boston Med. and Surg. Jour.*, August 16, 1888.

DISINFECTING INSTITUTIONS IN GERMANY.—Meetings are being held in almost every city and town of any size in Germany for the purpose of arranging for the establishment of disinfection institutions like those in operation in Berlin and Dresden. *Rundschau* (Prag) recommends individual apothecaries to establish small disinfection ovens in towns where the authorities will not take action, and thinks that such could be made sources of considerable revenue.—*Sanitary News*.

SEWAGE VENTILATORS.—Tall factory chimneys are used as sewage ventilators in Carlisle, England.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 18, 1888, to August 24, 1888.

Col. Charles Sutherland, Medical Director, directed to inspect the medical department at Fts. Brady, Mackinac, and Wayne, Mich.; Fts. Porter, Niagara and Ontario, N. Y.; Madison Bks. and Plattsburg Bks., N. Y.; Ft. Preble, Me.; Ft. Warren, Mass.; Ft. Adams, R. I.; Ft. Trumbull, Conn. Par. 7, S. O. 168, Div. Atlantic, August 16, 1888.

Lieut.-Col. Edward P. Vollum, Asst. Surgeon U. S. Army, leave of absence extended two months. Par. 17, S. O. 192, A. G. O., August 20, 1888.

Surgeon Jos. R. Smith, Medical Director Dept. of Dakota, to inspect Fts. Pembina, Totton, Buford, Abraham Lincoln and Yates, D. T. Par. 4, S. O. 77, Dept. of Dak., August 13, 1888.

Surgeon Anthony Heger, U. S. A., in addition to his other duties, to attend to the duties of the Medical Director

Div. of the Atlantic, during absence of Col. Chas. Sutherland. Par. 4, S. O. 170, Div. Atlantic, August 18, 1888.

Major Joseph P. Wright, Surgeon U. S. Army, detailed as a member of Army Retiring Board, Ft. Leavenworth, Kan., vice A. A. Woodhull, Major and Surgeon U. S. A., relieved. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Major John H. Janeway, Surgeon U. S. Army, granted leave of absence for one month on surgeon's certificate of disability. Par. 2, S. O. 41, Div. of the Pacific, August 8, 1888.

Major A. A. Woodhull, Surgeon U. S. Army, relieved from duty with Army Retiring Board, Ft. Leavenworth, Kan. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Major Harvey E. Brown, Surgeon U. S. Army, upon being relieved by Capt. Wm. C. Gorgas, Asst. Surgeon U. S. Army, to proceed to his proper station, Jackson Bks., New Orleans, La., reporting in person to the commanding officer of that post for duty. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Capt. Stevens G. Cowdrey, Asst. Surgeon, granted leave of absence for one month. S. O. 77, Dept. of Texas, July 25, 1888.

Capt. Fred. C. Ainsworth, Asst. Surgeon U. S. A., to proceed to Atlanta, Ga., and inspect the new Army hospital at that place. Par. 18, S. O. 192, A. G. O., August 20, 1888.

Capt. Louis M. Maus, Asst. Surgeon U. S. Army, having completed rifle practice at Camp S. B. Luce, Fisher's Island, N. Y., to return to his proper station (Ft. Schuyler, N. H.). Par. 3, S. O. 171, Div. of the Atlantic, August 20, 1888.

Capt. Geo. H. Tarney, Asst. Surgeon U. S. A., to proceed to St. Augustine, Fla., via Palatka, accompany the U. S. Troops thereat to Huntsville, Ala., as medical officer, and thereafter to return to his proper station (Ft. Monroe, Va.). Par. 4, S. O. 165, Div. Atlantic, August 13, 1888.

Capt. Daniel M. Appel, Asst. Surgeon, ordered to Ft. Bliss, Tex., for temporary duty. S. O. 77, Dept. of Tex., July 25, 1888.

Capt. Wm. C. Gorgas, Asst. Surgeon U. S. A., leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked, and ordered to proceed to Camp Monte Sano, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, Surgeon. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Capt. W. O. Owen, Jr., Asst. Surgeon U. S. A., Ft. Leavenworth, to report for temporary duty to the commanding officer, Ft. Gibson, I. T. Par. 1, S. O. 104, Dept. of the Missouri, August 20, 1888.

Asst. Surgeon Leonard Wood, U. S. A., to proceed from Ft. McDowell to San Carlos, A. T., and carry out the instructions of the Department commander; upon completion of that duty to return to proper station. S. O. 89, Dept. of Ariz., August 1, 1888.

Asst. Surgeon Charles F. Mason, U. S. Army, ordered to Ft. Washakie, Wyom. Ter., for duty. Par. 5, S. O. 190, A. G. O., August 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 25, 1888.

Surgeon Manly H. Simons, detached from "Constellation" and to the Naval Academy.

P. A. Surgeon A. C. H. Russell, detached from "Constellation" and to the Naval Academy.

P. A. Surgeon S. H. Dickson, detached from Marine Bks., Washington, D. C., and to the U. S. S. "Richmond."

P. A. Surgeon F. J. B. Cordeiro, ordered to the U. S. S. "Mohican."

Surgeon W. G. Farwell, detached from the U. S. S. "Saratoga" and ordered home to wait orders.

Surgeon Dwight Dickinson, detached from the U. S. S. "Portsmouth," ordered home to wait orders.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 8, 1888.

No. 10.

ORIGINAL ARTICLES.

CHOREA.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888

BY GEO. WHEELER JONES, M.D.,
OF DANVILLE, ILL.

In calling your attention to the subject of my paper, I am aware that chorea is not exclusively a disease of childhood, nor one that may not find its victims in all ages of life, even to the second childhood of extreme senility; still, its manifestations in the majority of instances are so confined to the years of minority that it has taken rank as a disorder of the earlier periods of life. Nor am I less aware that there is perhaps no malady to which humanity is subject that has received more attention than this. Its literature is so full and voluminous, exists in so many languages, and extends over so great length of time, even from the beginning of medical observations, that it may be considered one of the earliest pathological crosses we have been called upon to bear and to consider. At one time ranked as purely psychical in character, it has again received the reputation of being a plainly physical expression of a local injury to clearly defined cerebral tissue. In the search for its character and origin it has seemed truly to be the ignis fatuus of the medical world, now almost within our grasp, and the next observation as far away as ever; dancing, as its name implies, all over the field of professional thought and speculation—having its primary source in the borderland of the unknowable—relegated for ages to the regions of psychological pathology the consideration and investigation of which was often undertaken at the risk of life or excommunication, it has proven so fascinating a topic as to command attention and careful study from the most thoughtful and observant of every generation.

Judging from the results of philological investigations the disease has always, at least until quite recently, been considered either psychical or sexual in origin and exhibition. The names of a number of saints have been coupled, as adjectives, with the unrhythmical display of muscular contractions facetiously denominated dancing. Its

association with sexual abuses and irritations, especially about the age of puberty, has kept alive a popular belief as to its phallic source, a belief which perhaps has a larger foundation in fact than many another common notion, and which seems to be receiving much confirmation in the latest researches. Lest I might be misunderstood, perhaps I had better explain at this point what I mean by the last suggestion. Points and tracts of irritation are almost universally found in the basal ganglia of the cerebrum, in the genito-urinary tract of the cord, and near the seventh cervical vertebral region of the cord, all together suggesting marked irritation of the sexual system either as cause or effect, and in either case capable, through the reflexes, of sustaining an irregular motor action such as we see in this disease, the length of such sustention depending largely upon the moral and medicinal forces brought to bear upon each individual case. The natural history of such cases as can be properly estimated and honestly studied seems to go far to establish the correctness of this view in at least a large number of instances.

This thought will be reverted to when considering the etiology of the malady. So fully has the life history of the disease been given by various brilliant writers, both professional and secular; so clearly defined and beautifully described have been the symptoms, diagnosis and prognosis, that it would be an act of supererogation on my part to attempt an elaboration of these points in a practical paper such as I wish to lay before you. Several eminent writers will occur to you as being high authority on these divisions, and as having left little or nothing unsaid; so that, referring you to them, I shall only mention such items under these headings as may be necessary to make clearer the short argument, with its conclusions, to which I ask your attention. Several theories in etiology have been advanced, but none thus far covering sufficient ground to prove a satisfactory solution of the various problems embraced in a discussion of the disorder. The following are given by different authors as the probable character of its causes—I give them in the order of their antiquity: Psychical, neurotic, embolic, cardiac (which is really a subdivision of the preceding), and rheumatic. Of these perhaps the embolic

has been the most fascinating theory of recent dates, and has attracted the attention of many of our best writers, who for a long time had matters their own way, until Dickinson's careful and conscientious anatomical researches rendered the occupation of this line of thought no longer tenable as a sole explanation of its factors in etiology. That inheritance has much to do in the matter is now no mere suspicion.

We find a certain class of cases arising in adults, and evidently appearing at a certain point in senile changes, which are parts of family histories. The New England cases on record will illustrate these. But that inherited physiological conditions, conditions bordering upon if not a part of degenerative processes, are at the base of a very large proportion of the cases of this disease, there would seem to be little doubt. And it is this fact with its obscure accompaniments, so difficult of investigation and analysis, that has made the credence in psychic forces so slow in disappearing from the popular mind. In our search for post-mortem appearances we have looked for those gross conditions palpable to the unaided senses, and we have been puzzled to find nothing at all commensurate with the symptoms we have combated during life. A few of the coarser evidences of congestion, with the necessary physical changes of appearance and function in the basal ganglia, and especially in the corpora striata, gave rise for a time to the preponderance of belief that organic changes in the latter were the chief causes of the morbid manifestations met with during life, and extremely plausible were the arguments brought forward to sustain such view; so convincing, in fact, that their application to the pathological conditions found in later investigations will be almost a matter of course.

While the theorizing of late French writers has shown, or rather suggested, the apparent relationship between hysteria above and epilepsy below as connected by the intermediate disorder of chorea, and while the latter seemed likely to be lost as a distinct affection in the subdivisions of the other complaints, the various "tics" and neuroses, the scalpel and microscope and patience of Dickinson has laid before us the facts connected with the pathological state of the entire central nervous structures as placed upon exhibition by fatal attacks of the malady now under consideration. According to Dickinson and those who have since had the opportunity of verifying his observations, there is a state of general hyperæmia, varying only in degree from the faintest trace of congestion to actual or immediately threatened disorganization in a large proportion of the gray matter, extending from the base of the cerebrum to the lower or sacral portions of the spinal cord. In the cord this especially involves the posterior roots, and within the skull the corpora striata, the latter of these being most seriously

affected. It is reasonable to believe that in the vast majority of cases of chorea we have only a very slight grade of hyperæmia of these structures, which, under careful management and rest, with nature's tendencies to rally from derangements of all kinds, will certainly recover within a specified time and without any apparent ill results; and that this general, or in many cases local, hyperæmia, with its hyperæsthetic accompaniments, is the only discoverable pathological element for consideration, is a fact seemingly too clear to need other argument for confirmation. Still, to believe that it is the only etiological factor for us to contemplate would indicate a grave and serious error of judgment. The results of post-mortem observations indicate that the disease has its primary origin essentially in atomic errors of nutrition antedating by years, it may be by generations, the patent outbreak which attracts the attention of family and physician.

A very large number in the list of causes of the disease are formal and not efficient, are potential but not primary in their action—*e. g.*, a long walk in the sun or a heated discussion is the active agent in determining an attack of mania, but the true causes are other, often obscure and extending over months and years of a previous life whose irregularities of thought and habit may never be known, and can only be surmised from the startling revelation which comes to the social circle and the saddened household as one of its number disappears behind the portals of a hospital for the insane. To carry the illustration a little further, and render still clearer what I have yet to say, were I bold enough to offer another name for chorea, and one, I believe, far more suggestive of its etiological probabilities, I should call it mania musculi—insanity of the muscles—with a primary origin in nutritive changes in the nerve tissues which would necessitate for its full elucidation and proper individual management, in the large majority of cases, a careful investigation of the previous family history "to the third and fourth generation."

The rapid spread of the so-called epidemic forms of the disorder as appearing in the Middle Ages, and more recently in the vagaries of thought and ritualism of various semi- and pseudo-religious sects in England and America, is hardly to be taken into consideration, as this form of neurotic disturbance is more closely allied to hysteria, and involves derangements of the higher nerve structures such as may be entirely absent in the great majority of cases of pure chorea as we now understand it. Still, as these mental and moral absurdities were and are to a great extent the result of influences extending over a great length of time, often in the direct line in succeeding generations, their careful study is worthy of our fullest effort as throwing much light upon both psychoses and neuroses, and all intermediate manifesta-

tions of deranged nerve function. A study of the political, social and religious conditions preceding and accompanying these outbreaks reveals to us a mental strain affecting a large class of ignorant and half-educated people, trained in none of the principles of self-control, and inheriting crude ambitions and spiritual aspirations utterly hopeless of fulfilment in any existence of which a healthy mind can conceive. Many an organization of to-day in the various fields of human effort has its origin and possible continuance in the unfortunate mental condition of those who seem as yet only on the borders of actual disease, but whose minute nerve tissues are abnormal in their action. The communist and anarchist in politics and society; the noisy, ranting, half-civilized religionist; the statuto-maniac, and the "Christian scientist," are all illustrations of the nervo-mental irregularities in question, and will all bear scientific investigation for the facts they furnish as bearing upon allied conditions of well established professional importance, and as illustrating the influence of inheritance and the pitiful struggle of degenerating organisms in their despairing battle along the lines of the unyielding law of the "survival of the fittest," a law the principles of which, in its application to the further propagation of our race, is becoming of more vital importance to each succeeding generation.

An intemperate, a syphilitic, a licentious, a passionate ancestor will lay the foundation in atomic changes in the nutrition of the finer forms of tissue which renders a subsequent generation especially disabled from resisting the degenerative processes which may be inaugurated by a hundred active agencies lying in the way of every human life. The harass and the worry of dismantled hopes, disappointed ambitions, political, domestic, and commercial failures, all conduce to the same end in the establishment of a substratum of physical error upon which to see developed the vagaries of the various psychoses, neuroses, and still grosser aberrations of evolution. By such full elaboration of this line of thought as is entirely beyond the province of and time allotted to this paper, we will be enabled to join together the numerous etiological views, and comprehend the correctness of the application from individual positions of observation, and the incorrectness of the claim that any *one* view is capable of satisfying the requirements demanded in a solution of the difficulties in the way of a full etiological settlement of the perplexing study before us.

We thus learn that the foundations for the disease, the possibilities of its development, are laid and established, in most cases, in the generations preceding the one in which its manifestation is made apparent; and that, with the endowment thus received from ancestral accumulations of abnormal nutritions, very slight are the causes which may finally rupture the ever strained relations be-

tween the guiding thought and the executive will which is loosened in its moorings; and thus a rheumatism, with all its pathological possibilities in cardiac changes, embolic contingencies and nerve degenerations, becomes an active factor in the development of a form of choreic display. The same may be said of a malaria in its manifold expositions, some of which will even go so far as to determine types of actual alienation, as seen especially in the forms of cyclical insanity. The harass and mental worry connected with many of the unfortunate features of our modern school system is a prolific exciting cause of a very large number of the cases now occurring, one writer stating that 20 per cent. of the school children in New York City are affected more or less with the disorder. The torture of companions and playmates, the consciousness of injustice and miscomprehension—for we must remember that most of these cases are in children who are previously over-sensitive and acutely alive to the consciousness of some personal peculiarity or characteristic variation—the reflex irritations of virile development and sexual congestions; anything, in fact, which will unfavorably impress a nervous system in which there already exists a congenital or acquired disarrangement of the ultimate molecular constituents which need not be disorganization nor even marked hyperæsthesia, which are far more likely to result in pronounced dementia or acute mania.

That a very close relationship exists between this and some other diseases there seems little doubt. Eczema and chorea are very often coexisting or interchangeable in exhibit. So is rheumatism, and that in a very peculiar way, the chorea alternating with the high temperature of the more acute types of the rheumatism—and this in the cases where we might often fear in the midst of the exalted pyrexia to see a development of convulsions, to which extent I have occasionally witnessed the advance of the nerve disturbance. Epilepsy, hysteria, the *tics*—are all more or less related to chorea, while it is found to complicate or be associated with a large number of diseases, either by accident or through the incidental influences of nerve degeneration; for the disorder is essentially one of exhaustion and irritation of nerve substance, and brought into active display by whatever disturbs the molecular balances.

Perhaps its most dangerous complication is pregnancy, but as that is beyond the province of this Section, I simply mention it as an illustration of the rarity of fatal consequences as the disease occurs in childhood, and for the suggestion the fact contains as to the foundation of the disorder in an inheritance which tends to a discontinuance in this connection of further race, or rather family permanence.

Relapses are very common, especially in one or two years, and have their origin perhaps more

frequently in fright or great excitement than anything else.

I believe that, in our changeable climate especially, the disorder is often associated with, if not many times dependent upon the nerve congestions and irritations accompanying nephritic disorders. In several cases of enuresis, when the annoyance was relieved and a partial suppression of urine obtained, the result has been followed by the development of choreic symptoms which promptly disappeared upon a return of the incontinence. Knowing the nervous disturbance which often accompanies the high arterial tension caused by the inactive kidney, I have conceived the idea that many cases of chorea may be dependent upon a state of subacute (if I may use the term) urea poisoning, sudden in development and temporary in continuance. The analysis of a number of cases rather confirms me in such belief, *e. g.*, chorea is a very common sequela of scarlatina, and a marked attendant of chronic Bright's disease, as illustrated in a case I now have under observation.

The disorder is said to be very rare in negroes, some writers claiming their complete immunity, and in two or three favored localities of the torrid zone the disease is unknown. Why this is the case is unknown, nor is the usual explanation of the lower grade of intellectual development entirely worthy of consideration, as the disease almost certainly occurs in the conditions of retrogression and "reversal to original types," not, as a rule, in the strong constitutions and vigorous mentalities of the victors in the advancing lines of progress. I should be much more inclined to believe that in the exempt races there is an undiscovered something in the regions of the corpora striata, the parta perforata, the gray matter generally, or their reflex connections, which made these people unimpressible and invulnerable in disorders containing a marked psychic element, and set them apart as distinct from the white race as is the donkey from the horse—not a lower people, but a distinct type of evolution. But then, neither anthropology nor ethnology is the subject-matter of this paper.

The terminations of chorea, except in pregnancy, are almost invariably favorable, the patient being restored to his usual health in a few weeks, and only requiring that care and consideration afterward which in all well regulated families is a result of the discovery of a weak or tainted spot in the special breed. The weak places are to be strengthened, the tainted ones to be cleaned, the family life and general environment often totally changed, and such crossing made in future propagations as to secure to succeeding generations a clearer blood and a stronger brain. The possibly permanent amyloid or fatty changes in the elements of the large central ganglia are such as to justify this view and this advice, especially as we meet with so many cases followed by a permanent

nervousness only too suggestive of those early senile changes which make the optimist look grave and reconsider the correctness of his positions. As illustrative cases, and to more clearly define some of the points I wish to especially emphasize, I offer you, in brief, the following:

Case 1.—Age 1 day. Marked left unilateral chorea. Nurse said she noticed it when she first dressed the baby after birth. I had observed some irregular movements while tying, and afterward in dressing the cord, but gave it no attention, as the movements of all, or almost all newborn babies are choreic in manner, although not in character. The sex is male. For five days the movements grew rapidly worse, involving both sides and being almost continuous, after which a steady subsidence of all symptoms took place, the child recovering entirely in two weeks, and remaining so as yet, *i. e.*, so far as the chorea is concerned. Its maternal grandparent is a dipsomaniac, its father a syphilitic, and its mother a physical wreck from excessive childbearing. One of its brothers died at 4 years of cardiac mitral disease, a second died in convulsions, a third has an obstinate tetter, and *this* child will probably die during the coming summer of failure of nutrition in some form or other. The family have moved to another county, but I shall keep them under observation.

Case 2.—Girl, *æt.* 10 years; thin, wiry, neurotic from birth. Had general chorea, especially manifest in lower extremities—a regular dancer, in fact. Is quick in all her muscular movements and bright in speech, but slow to learn at school. Disease came on gradually, lasted several weeks, and seemed to get well under treatment, when a relapse occurred, and six weeks was required to control the case. She is now quite well, but gets very nervous under the slightest observation. Her maternal grandparents died of obscure disorders illy defined as "consumption," her mother is suffering from an inherited taint unknown to herself, but readily defined by her medical attendant. The mother is very neurotic. The father's mother died of tuberculosis, and the father is very subject to "rheumatism." There is no cardiac disorder in the patient. The families on both sides are highly neurotic in character and several of them "queer," two uncles of the patient (maternal) having committed suicide, and almost all the immediate relatives having but one child if any, most of them having none.

Case 3.—Female, *æt.* 16, well-formed and plump, but mentally not strong. Very sweet disposition, but lazy and idle. Marked tendency to sexual excitation. Heart normal, other organs normal. Active cause of attack, fright. This girl was a tough case, resisting the united efforts of the practitioners of several "schools" for several months. Coming into my hands, I gave her no medicine, gave her full nourishment, outdoor

exercise, and brought high moral influences to bear upon her. She speedily recovered, but will always be a little "weak-minded." Her father is a "crank," his father ditto; his mother has been a chronic invalid for years, a "nervous failure." The patient's mother is a plump, healthy woman with no moral sense—little idea of right and wrong; her grandfather died of "consumption" venereal in origin, and her grandmother is a town gossip. Two brothers are dipsomaniacs. The patient's brother is a fit subject for the "home for feeble-minded."

Case 4.—Female, æt. 15; nice-looking, healthy appearing girl generally. Had a mitral cardiac murmur, general cardiac hypertrophy. General chorea, more marked on left side. Very anæmic when presented for treatment. Active cause of disease, sexual annoyance from a follower she did not like. She had menstruated but three months before the attack of chorea. Her environment was not conducive to an elevated grade of morality, and she was somewhat disinclined to engage in the occupation of her associates. Owing to the continued action of the exciting causes, her medical man made a failure and she was sent to me. I had her taken to the home of distant friends where everything was changed, and a few weeks' care, kindness and medication completely restored her to excellent ordinary health. In this case the father is a common drunkard, the mother worse, and a neurotic, one son a dipsomaniac, and every member of the family "off" in morals and health. The grandparents are unknown, if they ever knowingly existed.

Now I offer these as mere types of extreme cases to illustrate points in the argument. They are cases of medical friends not residing in my own vicinity, but with which I am thoroughly acquainted. In each of these families the retrograde changes are so fully established that the two succeeding generations will probably witness the extinction of the stock, unless in some particular individual who shall fortunately inherit an excess of the better elements, along with an endowment of greater vital force and a proper marriage, a long course of tender care and wise training should lay the substructure for a comparatively new lineage. Of course these illustrations are not offered as types of all families in which chorea is found, but as exemplifications of the final possible consequence of the causes and conditions which permit the development of chorea, and as warnings of the fact that a chorea is a danger signal pointing toward degeneration, and is to be promptly and largely heeded by all in whom is a love of family, and a desire for the perpetuation of line and race.

A few words as to treatment and I am done. I know that ours has been characterized as the "science of observations," and in the past of our profession deductions from seeming facts have

been always unsafe. But I think the trouble has been with our "facts." Reasoning by deduction from the *truth* is always safe and productive of the best of results to all mankind in all departments of knowledge, and in no age of the world is this more clearly seen than in our own day and generation; and thus we have only to be sure of our facts, to know certainly "what is truth," and the large knowledge and patient wisdom of the well-trained mind advances safely and triumphantly into the unexplored regions of thought open to human endeavor. If the views suggested in this paper are correct, that the primary causes of chorea are such as may produce a condition involving ultimate degeneration and nervous exhaustion, not necessarily associated with even hyperæmia, but implying a relaxation of the vital forces in the ultimate elements of nerve tissue, and in intimate relation to the disarrangements of malnutrition, we must look for those remedies whose tonic influence, recuperative powers and alterative properties are such as will kindly, gently, but steadily bring strength and order out of the weakness and threatened nervous chaos into which our patient is drifting, by which he is even now invested.

At the head of the list, and endorsed by every writer of any prominence, and I have consulted a very large number, is arsenic. Remembering the remarkable tonic properties of this drug, in medicinal doses, upon many other disorders of the nervous system, its wide usefulness in the neuroses of malnutrition and malassimilation, the advantage taken of its subtle sustaining powers by the experienced guides and dwellers in high altitudes, where long-continued exertion in a rare atmosphere tends to unsettle and demoralize the nervous economies, we are prepared to expect much from its potencies in chorea, and we will not be disappointed in the vast majority of cases, whether we use it as a result of observation, or a consequence of intelligent deduction. It should be given on these general principles, but to *each individual* as the special constitution requires, rapidly pushing the remedy to the point of full tolerance and holding it there as its effects will permit and the case in hand demands, carefully avoiding any toxic manifestation. In extreme and obstinate cases, especially of the inherited senile class reported from New England, the hypodermic administration of the remedy gives better results than any other course. Arsenic may be combined with anything else that the requirements of the case suggest as demanded.

This is one of the disorders in which the Hahnemaniacs have obtained considerable notoriety from the fact that, under the influence of removal from exciting causes, rest, nutritious food and general hygiene, the vast majority of cases of chorea recover without any medication; and as these fellows give "arsenicum" for almost everything, there is accidentally added to good

general management and nursing the most appropriate of remedies. As overwork and worry are powerful factors in determining an attack, rest, as absolute as practicable for a time, to be changed to gentle, passive outdoor exercise as soon as the symptoms commence subsiding, or from the first in mild cases, will always be in order. The various "food tonics," selecting the one most pleasant and best agreeing with the patient, should be given from the first, along with easily digested and highly nutritious food. I have found general daily inunctions and gentle massage excellent adjuvants and as seeming to have a decided influence in abbreviating the period of convalescence, the moderate and healthful stimulation of the peripheral branches having a highly beneficial effect upon the nerve centres. All sources of reflex *irritation* are to be thoroughly removed, and they will sometimes be found where least expected.

Iron, zinc, and the compounds of phosphorus, are very useful as auxiliaries to be introduced for the elimination or control of special symptoms, some of which are nearly always found. The same may be said of the bromides, chloral, ether spray to the spine, hyoscyamus, eserine, nitrite of amyl, skunk cabbage, cimicifuga racemose, cod-liver oil, cocaine, malts, and everything else which has been recommended, for the use of which there might be some temporary demand in an individual case. But every intelligent physician has favorite remedies of his own selection for the combat of symptomatic derangements. Phosphorus uncombined is an irritant and worse than no remedy, but the organic compounds of phosphorus are of great value as true nutrients. In conditions of actual hyperæmia of the cord especially, I have obtained excellent results from ergot, from ipecac in small doses, and from hydrastis, the two latter being remedies of greater potency than is generally known, seeming to act as direct tonics to the spinal and sympathetic nervous systems.

Strychnia, the "nux" of the "homos," is another agent of very great value in the treatment of chorea. The mistake in its administration consists in giving too large a dose. The $\frac{1}{1000}$ to the $\frac{1}{500}$ of a grain four times daily is sufficient to commence with in children of 8 or 10 years of age, which dose may be cautiously increased, or more frequently administered, if deemed desirable. In these minute doses it acts as a gentle tonic stimulant to an exhausted, depressed and irritable nervous system, producing no unpleasant effects so far as I have been able to discover. Where rheumatism is a prominent factor, I consider salicin with phytolacca decandra and guaiaci as the very best treatment in most of cases. Electricity is coming to the front of late as another reliable remedy in the ordinary forms of the disease. It should be used in the form of galvanism and applied with caution to the brain, not using more than 3 milliamperes daily, so as to produce an anodyne or

soporific effect. Downward galvanization of the cord is the correct method of its application to the spine, where its soothing and steadying influence is often manifest to a remarkable degree. It is a remedy well worthy of trial in all cases the least violent in degree or obstinate in character.

I believe I have brought forward most of the points I wish you to consider. Chorea is largely on the increase, especially in this country, and many of the causes, both remote and active, are within the power of our removal. If I have offered a suggestion that will make our course plainer, and our duty more imperative, I am content, and shall sincerely rejoice if I have been in the least instrumental in throwing an additional glimmer of light upon a subject of so great importance to so many and of such deep interest to myself.

REVERSIVE ANOMALIES IN THE STUDY OF THE NEUROSES.

Read in the Section of Practice of Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1883.

BY IRVING C. ROSSE, M.D.,
OF WASHINGTON, D. C.

In studying the causes of nervous disease we cannot overlook neurotic inheritance and predisposition, and we are obliged to recognize the importance of reversive anomalies not only from a biological, but from a pathological, point of view. We often come across such terms as atavism, and teratology, in the more modern works that deal with the investigation of the nervous functions.

The subject of morphological and physiological retrogression not being well explained in any of the text-books that have come under my notice, it may be a sort of stumbling-block to some, as it was to me, until a short time since, when I sufficiently familiarized myself with enough of the details of the topic to prepare a systematic paper, lately printed in a standard medical publication.

Conservative heredity, displaying itself intermittently in the form and function of progenitor and progeny, has no doubt existed in all organic beings from time immemorial; but the idea does not seem to have taken verbal shape and embodiment until the botanist, Duchesne, created the word atavism to designate one of the proceedings of heredity. The tendency of living beings to reproduce in time a succession of individuals like their parents may manifest itself in a mediate, a *direct*, or a *collateral* form. This phenomenon has for its condition, first, variation; for, if living beings did not offer any variation in their type, heredity would be necessarily and always immediate, and atavism would be confounded with it. But the typical forms modify: in some measure and for some cause, whatever it be, they may transmit these modifications to their descendants.

This transmission operates either on the first generation or in subsequent generations; in the first case there is *immediate* heredity, in the second case *mediate* heredity, or atavism. In its turn atavism may crop out in a direct descentance or in a collateral descentance.

For fear that I am going too fast, and in order to make myself better understood, I must revert to some of the terms that establish the compass and extent of this singular law of intermittency which rules the greater part of the states of life.

Some writers consider it as a force distinct and antagonistic to heredity; others a particular case of heredity—the whole heritage of an anterior production; while others look upon heredity as a generic term of which atavism is a *modality*, that is, a difference in mode or form.

Another writer explains atavism as the reappearance in an individual, or in a group of individuals, of anatomo-physiological characters, positive or negative, which their immediate parents did not show, but which were present in their direct or collateral ancestors.

The "solution of continuity in the line of direct heredity," known as atavism, is derived from the Latin *atavus* (a great grandfather); and I would define it as the tendency in animal and in vegetable life to inherit biological preëxistences and to return to a primitive type progressively altered. It is by virtue of this tendency that living organisms inherit peculiarities from their remote ancestry which their immediate parents did not present.

Atavism is not to be confounded with ordinary inheritance or heredity. In the latter the tendency of nature is to reproduce in the offspring certain peculiarities of the parental organization; under the influence of atavism, the offspring may take the traits and characters of the primitive forms with no resemblance either to father or grandfather, but to ancestors more remote. Atavism should be distinguished from the variations, teratological, pathological, or toxonomic, that interrupt the succession of hereditary phenomena. Nearly synonymous is the term *survival*, used by Tylor to signify a superstitious remainder or residuum of bygone ages, and the Darwinian expression *reversion* to indicate the occasional or individual appearance of traits accumulated by heredity and handed down from remote ancestry. Reversion is also used to signify the actual returning of a variety or species to such remotely descended traits. This is instanced in the tendency of animals long domesticated, when they become feral, to revert to the pristine form. As a case in point we may mention the wild horses of Montana, which are such a source of annoyance to stock raisers in enticing away tame horses that their slaughter is made an object of hunting parties. That the notion of atavism has prevailed for some time, it is only necessary to allude to

the biblical version regarding the visitation of the sins of the father upon the children of the third and fourth generation. In the sixteenth century Montaigne noticed these strange transmissions, and wondered how the little drop of semen from which we are produced, bears not only the impression of the bodily form, but a likeness of thought and inclination through a progress so hap-hazard and so irregular that the great-grandson shall resemble the great-grandfather, and the nephew the uncle. Darwin, speaking of the injurious characters that tend to reappear through reversion, mentions the blackness in sheep, and among mankind some of the worst dispositions which occasionally, without any assignable cause, make their appearance in families.

To come down to the present time, there are men among us to-day "who have come too late in a world too old"—men whose skulls are of an absolutely neanderthaloid type; men whose minds are struck with an immobility, an arrest of development, an intellectual atavism, a reversion to ancestral forms and prehistoric ideas as well-marked, for example, as the birth in a family of a red-headed child whose parents are not xanthochoroids, or the reappearance in a flock, at intervals, of the familiar black sheep. In the brain of such of our contemporaries, in consequence of the reappearance of an ancestral conformation, there appear the ideas of the middle ages, which make of this contemporary a living fossil, absolutely inaccessible to modern ideas. All of you can recall acquaintances of this description. Such people are found clinging to hoary-headed errors and old superstitions, not only in science but in all the walks of life, social, religious and political. Of what use is it to talk to such men about the reduction of the tariff, or the brotherhood of man, of association, of science? Such men, cerebrally speaking, are of the reactionary class, and though walking about under the mask of contemporary manners, belong to the middle ages just as much as though they wore sword and doublet.

It is no vague generality when we say that the characters transmitted by atavism are of all orders, normal, pathological, teratological, intellectual, and moral; and that they may be observed in the two kingdoms, animal and vegetable, in domestic animals and in man.

The atavic influence has been well traced in the laws that determine the evolution and culture of a plant, and in its reversion to the wild or uncultivated state. This may be witnessed in many flowers and vegetables, and in fruit trees, but the mention of the experiments made with the little flower known as the *bluet*, or bluebottle, and with Indian corn, will suffice as illustrations. Broca continued these experiments for eight years. He found, among a bed of bluets sowed with seed collected from an open field, the greater

part of the flowers to be blue, but some bore violet flowers, and even some a little reddish. The seeds of these reddish flowers were sowed and collected the following year. Of a hundred flowers, about two-thirds of them were a fine blue; others presented various shades, ranging from blue to violet, from violet to red, and even to rose. The lightest colored of these flowers were preserved and used the following year to sow another border. This time the number of flowers entirely blue was little less than half; the greater part being violet or red. There were many red, and some of a red so light as almost to pass for white. It thus appears probable that in making a methodical selection from each generation of the lightest-colored flowers, the conditions are favorable to obtain a fixed race of *bluets* quite *white*.

The influence of atavism is further shown in maize, or Indian corn, of which there are two varieties, or rather two distinct races, the light and the brown. That they are more than varieties is shown by the fact that we can never obtain by culture intermediary shades. Artificial fecundation being easy upon this androgynous plant, permits us to obtain variegated ears, which bear at the same time light grains and brown ones, as we see in what is known as "pop-corn;" but each grain belongs to one or the other race. A farmer, having accidentally discovered an ear of corn entirely brown, called the attention of Broca to this extraordinary circumstance. He considered it a natural variety, produced spontaneously, perhaps, under the influence of an atavism going back to a great number of generations. The grains of this ear having been planted, gave sixty-nine ears, thirty-five of which were light and thirty-four brown. Repeated experiments gave equal results. A fact worth noting on this point is that all the ears of the same stalk were of the same color.

Atavism is shown in the seminal principle that passes secretly through a generation, as is seen in certain insects, the wood-louse, for instance, where a single fecundation answers for nine generations of insects, all of whom are born prolific, and procreate without the help of the male. In this case the individual of the ninth generation has received his life, his form, and his instincts from an eighth grandfather, a long time disappeared. Another example of an anatomical order occurs in silk-worms of a white race who produce a certain number of yellow *cocoons*, although these have been carefully weeded out for more than a century.

The same law that governs the vital continuity in the foregoing instances applies to the lower animals and to mankind. Atavism in pigeons is well known; and nearly every one has noticed the stripes on certain horses, which are a reversion to their common ancestor, the zebra. According to Quatrefages, it is in vain that they kill

each year, in the flock of black sheep in Andalusia, every lamb that bears the least trace of white wool; each year there are born still some individuals that have the proscribed tint. In domesticated animals atavism plays a considerable rôle in all races that have been formed by breeders. With dog-fanciers and stock-raisers it is a matter of so much concern that they have need to exercise great care in the multiplication of these animals, and to choose as reproducers only those whose grandfathers have no transmissible defect. On this point the experiment mentioned by Darwin may be cited: The Earl of Powis caused some domesticated hump-backed cattle to be crossed by the wild species of India, with the result not of producing a medium grade of characteristics, but of a marked reversion to the ancient. If the time allowed, I might adduce numerous other instances of remote atavism, such as that of the numerous muscles appearing abnormally in man which are normal to the lower animals, notably the monkey. Other facts of the same order have reference to the teeth; the persistence of the molar and the metopic sutures and of the semi-lunar fold in the eye, double mammaries or uterus; and other sleeping conformations, that are sometimes recalled into existence.

It is in virtue of atavism that man, like other animals, often reproduces the traits of his grandparents. Characters occasionally make their reappearance in him which we have reason to believe were possessed by his early progenitors. Unhappily for man, atavistic antecedents are not taken into account in the matter of union of the sexes. People marry and the offspring frequently resemble the grandparents, not only morphologically, but in temperament, diathesis, and even their diseases.

It is well known that portrait galleries and the monuments of churches in Europe help to trace the source from which some long-lost type of feature has been derived; and the reappearance of the Bourbon nose in France is a matter of common knowledge.

Less vague facts of this order are those occurring in the cases of crossing of the colored races. Martin de Moussy has observed families in which at the end of several generations there were a series of children having much more than their father or mother the signs of an African mixture going back at least to a fifth anterior generation. He cites also a woman whose father was a quadroon and whose mother offered traces of African blood, married to an Englishman of pure race. She had nineteen children, who all offered unequivocal traces of this sixteenth of African blood. On the other hand, two sisters of this woman, married also to Europeans, had children who bore no trace of the paternal mixture. (*Bulletin de la Soc. d'Anthropologie*, 1865, p. 288.)

The occasional appearance of a child covered with hair is regarded by many as a fact of very old atavism. The hairy men of Japan, the Ainos, are also believed to be reversions to some ancestral form, and it is argued by some that the anthropoid apes may be the descendants of ape-like men. Persons who have lately visited the Paris Hippodrome may remember a pilose Russian, whose peculiarities are believed to be a phenomenal reversion to the characters of a very ancient lost race. Other examples of teratological pilosism might also be cited. It is thought by those who have given the matter attention that many races of men have lived before the present ones without sending representatives of their types down to us; but they have not disappeared without the blood of several among them being transmitted, by infinitesimal dilutions, down to the present races.

An attempt to point out with precision the laws of atavism results in the statement that every organized being is the product of two forces, one of which is the resultant of his complete genealogical tree, from the first origin of the organic branch from which he springs, and the other is furnished by all the circumstances that have acted upon the individual himself during all the duration of his development. It is further asserted that when men or animals manifest impulses of an excitable character, and exhibit pleasures and sympathies that seem to be out of relation to their culture and personal experience, or to the culture of the family or the race, whether in dreams or in waking, the source of these must be found in long past or ancestral memories produced according to the law of reversion.

Perhaps not the least curious of the modes of atavism is its influence in the province of the mind. Philogenic heritage manifests itself in connection with memory. According to Galton, the celebrated Hellenist, Dr. Porson, whose memory was surprising for its extent and fidelity, transmitted this peculiarity to one of his grandchildren, and Lady Hester Stanhope claims to have inherited her grandfather's memory. Assuming that certain ancestral synesies have been ancestrally realized in time and place, the reversion to them may become the starting point of a new evolution. The capacity of reproduction or a new development of the transmitted antecedent synesies or substrata is ancestral memory. The faculties that preside over the representative signs of ideas, it is said, are also subject to the law of correlative evolution and reversion which is manifested both in health and disease. Scriptory atavism is witnessed in the reversion to ancestral styles of writing; and in the speech it is noticed in the reversion to ancestral or racial pronunciation of letters and words. In aphasia the patient often reverts to the language of childhood,

which is his only language, and like some races of savages, he is unable to pronounce labials. A further pathological reversion is seen in dreams, which in fact are nothing more nor less than abnormal reminiscences and reproductions. Even the pleasures and pains of memory may be transmitted as substrata from remote ancestors. States of consciousness, owing to ancestral reversion, are shown by various facts. It has been noticed that in a menagerie the straw for bedding lions and tigers could not be used for horses, because the odor terrified them when brought into the stable. Yet many generations of horses have passed away since they were troubled by these beasts. Sir Daniel Brewster's fear of drowning, which haunted the minds of more than one of his descendants, is also cited as an instance.

Reversion to synesies is shown during special conditions of the brain tissue, such as characterize sleep and dreaming, somnambulism and insanity. Certain vain pleasurable and painful states are likewise due to ancestral reversions. The keen pleasure afforded by the sight of mountains and hills; many prejudices, antipathies, and æsthetic sentiments are due to ancestral substrata.

In no other way can I account for these conditions as observed in myself while strolling about the streets of Edinburgh, or in listening to the bagpipes, in climbing the heathery Scotch hills, or the misty hills of Alaska—sights and sounds that doubtless afforded similar pleasure to my Caledonian ancestry.

Emotional reversion is noticed in those cases of cerebral disease in which the semeiotic or sign-making tissues are involved, and speech or the other modes of expression are affected. Immoral dreaming among persons whose life is above reproach during waking hours, is cited as a further instance of morbid emotional reversion.

There are also reversions owing to defective evolution and nutrition that can be traced beyond immediate ancestors to the substrata of the race acquired during savage or primitive life in long distant ages. An instance of this occurs where the conduct is that of uncivilized man. In theroid idiotic, or imbecile reversion to brute-like character of form, there are no signs of morphological reversion, but the dominant aberrations are theroid. The permanence of a substratum of savage life is seen in our large cities among the vicious classes, who are to all intents and purposes savages in everything but speech, dress and name.

Of psychological interest at the present time are the reversions to ancestral modes of thought in France, where there is a reversion to the ancient doctrines of metempsychosis, and of the evolution and transmission of souls.

In human pathology the reappearance of morbid traits existing in ancestors, but not in immediate parents, can be maintained by cited cases; and the influence of atavism in the hereditary

transmission of disease can be traced for four, five, seven, or in fact, an unlimited number of generations.

Alternate heredity of anomalies have been noticed in such conditions as polydactylism, hare-lip, gibbosity, and the like. Most physicians have under their own eyes some examples of diatheses that jump one or more generations. The principal diseases and defects in which the influence of atavism has been traced are color-blindness, the hæmorrhagic diathesis, pseudo-hypertrophic paralysis with its allied diseases, and a large number of the neuroses. Lucas cites numerous facts of atavism for ocular infirmities. Pliny relates that in a family three persons were born with eyes covered with a membrane, and that this vice of conformation always skipped one generation (lib. vij, ch. xij).

Among the old and well-known cases of color-blindness is that reported by Dr. Earle, in which in addition to the usual limitation by atavism to alternate generations there was evidence of transmission from a great-grandfather to two great-grandsons, without the development of the peculiarity in the intermediate transmitters of the defect. There is another and more recently recorded case of the same kind in which two generations were skipped over, the transmission being effected through two females in the second generation, and thence onwards through three females in the third generation, to seven great-grandsons in the fourth generation.

Such extension is still more frequently observed in cases of hæmatophilia or the hæmorrhagic diathesis. In fact, its most important mode of propagation is not so much by the bleeders themselves as by their non-bleeder brothers and sisters. In the literature of hæmatophilia there are numerous instances of its indirect transmission. The "Appleton-Brown bleeder family" is known to American physicians. Investigation shows the "Tenna bleeders," in Switzerland, to be descended from a remote ancestor named Walther. The influence of atavism is distinctly traced in the insanity and blindness of George III, to his remote ancestor, Duke William, eight centuries back. Cases of deaf-mutism have been known to descend from male ancestors five generations back, and the atavistic transmission of a family defect to be handed down in a direct male line from a deaf-mute great-grandfather to a deaf-mute's great-grandson. Daly states that in 124 deaf-mutes in the Institution of deaf-mutes at Paris three cases of deafness proceeded from the grandfather. Vennette and Puybonnieux cite analogous facts.

Dr. Matheson, of Ontario, who has examined the histories of 661 deaf-mute children, states that he is unable to find that any of the parents were, or are, deaf and dumb persons. A few of their grandparents, however, were mutes.

In the same manner that we may find numer-

ous examples of alternating heredity of mental disposition where family traditions are preserved, so may the instability of insanity pass on through one or more generations without its being developed. A case is related where a man had two wives, and by each wife one child—a boy by one and a girl by the other—yet both these children were alike nervously unstable, the father's mother having been a lunatic.

Many practitioners have noticed that gout, pulmonary tuberculosis, and scrofula may jump one or more generations. G. Seé has observed seven cases of the scrofulous diathesis which sprung from the grandparent had left the parents free. Other diseases, diathesis, neuroses, and even congenital and moral defects, the so-called criminality and forms of wickedness, may sometimes disappear for several generations, and crop out in a manner evidently owing to a reversionary anomaly. This is instanced in the history of prostitution, in the issues of courtesan mothers, and it is not necessary to refer to the Messalinas, Poppes, and Julias, of antiquity.

Hypospadians may be developed by what is termed "indirect atavism." On this point Dr. Lingard remarks that all breeders of cattle and other animals are familiar with this fact of the females throwing back, that is, reproducing, after impregnation by a second male, the peculiarities of some other male by whom they had previously been impregnated. That this is possible in the human female he thinks is proven by the following case: The third of six hypospadians died a few years after the birth of his three sons. His widow within eighteen months contracted a second marriage, the husband in this instance not being a hypospadian and having no history of any such defect in his family. By this marriage she had four sons, all hypospadians. Two of these hypospadic sons begat hypospadians in their turn. But one of these sons had three boys without any deficiency, although the eldest boy was a hypospadian. Sir Henry Holland mentions an instance in which four out of five of a family of children became blind at the age of 12; the only record of any preceding occurrence was an ancient tombstone, the figures and inscriptions on which showed that a mother and her children, members of two remote generations of the same family, had also been blind.

Facts like these merit confirmation by other facts rigorously observed; and it is to be regretted, in the interest of science, that families are averse from keeping a history of their diseases. It is to be hoped that Mr. Francis Galton's recent efforts in this direction may be successful in throwing further light on the manner in which these biological peculiarities, though interrupted or latent, are transmitted and yet return to visit the children of other generations.

In medicine reversionary anomalies are something

more than simple objects of curiosity. They have both philosophical and pathological value; and in the same manner that pathological anatomy teaches us a great deal about physiology, so we may learn much from studying the development of the brain and nervous systems both in a phylogenic and in an ontogenic or fetal way.

That form of reversion found in microcephalic idiots is highly instructive, and according to Carl Vogt, is one of the finest examples of reversion character to be found in the whole range of teratology. Besides, a correct observance and methodical study of what takes place in the minds of idiots enables us to determine many of the anatomical and physiological conditions upon which are based the manifestations of their intelligence.

I wish I could dwell longer on the phenomena of these important subjects, and that more particularly for the reason that they are scarcely mentioned even by the standard classical writers on physiology. I can only dismiss them by saying that the questions of atavism and of teratology are almost entirely new, and that the future will assign to them a much more important rôle than we have any idea of at the present.

THE FAILURE OF DR. J. B. THOMAS' TREATMENT OF URETHRAL STRICTURE BY ELECTROLYSIS.

BY ROBERT NEWMAN, M.D.,
OF NEW YORK.

My excuse for trespassing on the space of *THE JOURNAL*, is to correct any false impression that may have been created through the erroneous conclusions drawn by Dr. J. B. Thomas, of Pittsburgh (in *THE JOURNAL* of August 11), from an obvious misinterpretation of my report of the second hundred cases of urethral strictures treated by electrolysis.

Dr. Thomas unqualifiedly condemns treatment of urethral strictures by electrolysis, and urges upon us his limited experience and failure in a very meagre report of one case.

Is it sound logic to condemn an operation and method because a novice has made a failure in one or a few cases, when surgeons of undoubted standing from all parts of the world have reported hundreds of successful cases, endorsing, recognizing and establishing the method and operation as a success?

Dr. Thomas' statement is, that his patient, S. K. M., presented himself with cystitis and several strictures, for which he had been treated by many doctors, and in many ways. Dr. Thomas' treatment of him by gradual dilatation was a failure, because after having dilated the urethra to the size of a No. 24 French, on next presentation of the patient it was found that the urethra had

again contracted to No. 20. Electrolysis was then used four times. "Patient presented himself with an inflammation of the urethra anterior to the first stricture so severe in character, etc.." (Italics are mine). "The patient never returned."

Comments: Why was not the cystitis treated first, or at least simultaneously, with the stricture? It is not stated that the cystitis was treated, therefore we must believe that it was not. Certainly treatment of the cystitis was indicated, since spasm of an inflamed bladder may prevent any amelioration of the stricture, and especially will prevent the success of electrolysis.

The next question is, what caused the inflammation of the urethra anterior to the stricture? Was this inflammation the consequence of the treatment, or caused by an imprudence of the patient? I do not wonder the patient never returned. And I must protest against the condemnation of electrolysis in the treatment of urethral strictures, on such evidence.

Dr. Thomas next (doubtless for his own reasons) attempts so unfair an analysis of the statistics of my second hundred cases, published in *THE JOURNAL* of Sept. 24, 1887, that I feel it my duty to reply: *First*, to correct his misstatements of my statistics. *Second*, to maintain my position in regard to urethral anatomy and surgery, in which Dr. Thomas and I differ widely.

Had the gentleman carefully read my papers he would not had made his paper a personal attack, and would have saved me the necessity of repetition to answer frivolous objections to the method of electrolysis.

Dr. Thomas though admitting No. 31 French, to be the calibre of the ordinary urethra, yet carps at cases presented in my statistics enlarged to No. 32 French, claiming that some must have been capable of enlargement to No. 40 French, closing with these words, "it is quite an imposition upon the credulity of the profession to state that such patients were, as we are led to believe, cured." I answer that no one is "led to believe," but Dr. Thomas misleads, by entirely ignoring my *definite* statement of the cure, as set forth. We may, and certainly do, differ about the size of the normal urethra, and as to what is meant by a cure. I have heretofore explained that I do not enlarge the urethra to a certain theoretical size, but mark in my statements "cured," when the patient feels and is well, passes a free, unobstructed stream, and is satisfied with his condition to such a degree that he objects to any further treatment and enlargement, and does not desire a larger-sized urethra. In some exceptional cases circumstances may alter the rules. As a rule I have tried to enlarge strictures to No. 28 French, but when the meatus would not admit an instrument larger than a No. 25, I certainly stopped, and did not cut the meatus. In many cases I found that no larger instrument than a No. 25 would pass the meatus. I do not

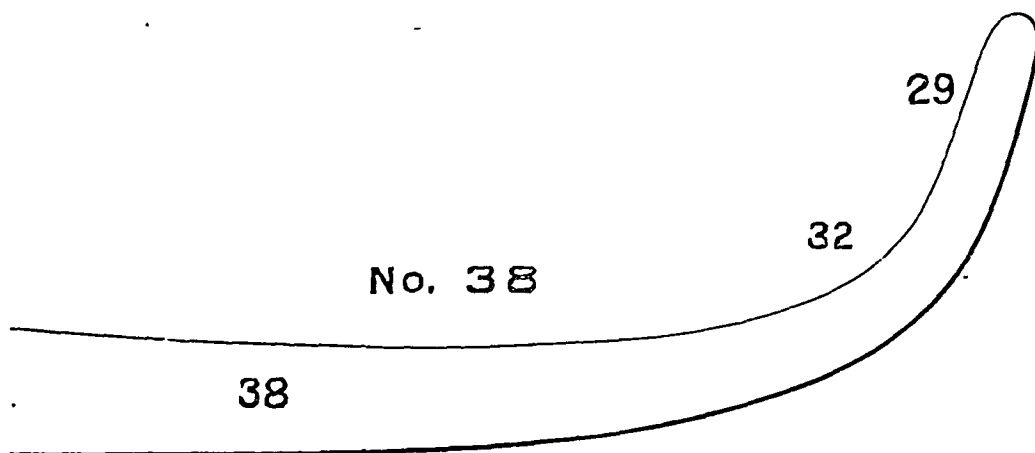


FIGURE 1.

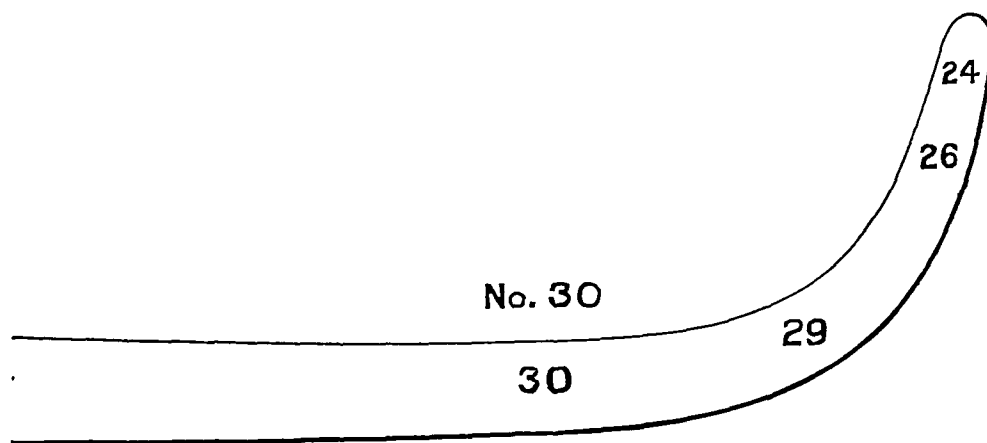


FIGURE 2.—Figs. 1 and 2, the ordinary Steel Sound.

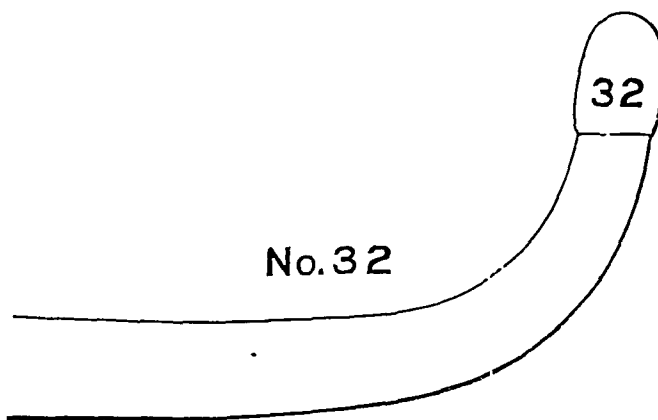


FIGURE 3.

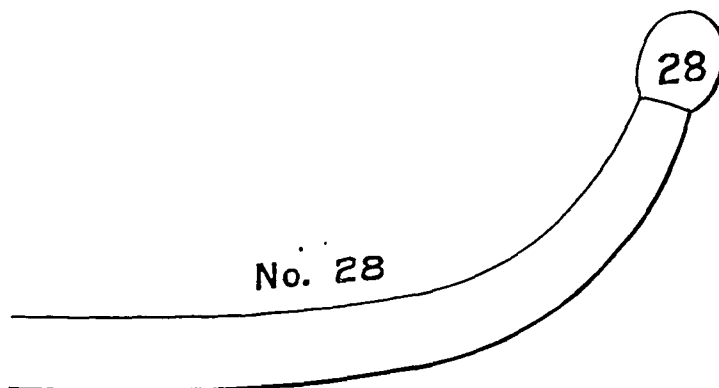


FIGURE 4.—Figs. 3 and 4, Newman's Electrodes.

intend to discuss theories and simply repeat facts that have been reported before, which Dr. Thomas wholly ignored, courteously adding "Twenty out of the hundred were never seen after treatment was discontinued." But he neglects to state that such cases were only recently treated, and the urethra enlarged to its maximum size of 28 and 32, French, and were so well that they did not need to be seen again. In most of the cases the patients were reexamined, varying in the first hundred in point of time from three and a half to eleven years; in the second from one to five years. No relapse having occurred, viz., no contraction having taken place, meaning that the same sized sound was used in the reexamination without electricity, as passed with electricity at the close of the treatment.

The usual steel sound tapers, so that the end which is used in entering the meatus is from two to nine numbers smaller than the stem of the instrument, while my electrodes have upon the end which is used in entering the meatus, an egg-shaped bulb, which is the full size given in my tables. It is easier to enter the urethra with the tapering instrument than with a six-sized larger egg-shaped bulb. The accompanying drawing will illustrate it. Figures 1 and 2 represent the usual steel sounds; figures 3 and 4 my electrodes. It will be seen from careful measurement that a No. 38 is at its conical end only a No. 29, and in figure 2 we find that a No. 30 is at its conical end only No. 24; this tapering end making a difference of four and nine numbers respectively. It is easier to introduce a No. 38, when the conical end is equal to a No. 29, than to pass through the meatus my round, egg-shaped No. 32, as it is evidenced that my No. 32, French, electrode is nearly equal in size to the ordinary No. 40 sound. I have in my writings explained why my electrodes have the egg-shaped bulb for my treatment by electrolysis. My statistics show that in 33 per cent. of cases the stricture has been enlarged to No. 28, which is equal to about an ordinary No. 32 sound, and that no relapse has taken place; and such an enlargement has been made in some cases of strictures which were so small that no instrument could pass at first. From the experience and observation of many years I have come to the conclusion that the majority of urethras are normal if my No. 28 electrode can pass, that No. 30 is an exceptionally large urethra, and that No. 32 is almost always too large, and sometimes I regretted having used it.

The next mistake Dr. Thomas makes is in saying that some patients were discharged with their urethras admitting only a No. 14, French. This I deny. In my statistics No. 14 is mentioned twice, as follows:

No. 138.—A. N., Two months enlarged to No. 14, then disappeared, and two years later enlarged to No. 28. Reexamined May, 1887, and found

No. 28. No relapse. Still under observation. No. 183.—Dr. O. V. S. No instrument would pass. Improved very slowly to No. 14. Gout, etc., prevented his return.

Therefore, it will be seen that the first case was enlarged to No. 28, with no relapse; and that the second case was not reported as "cured," but only as "improved." The patient was unable to return for treatment, but it was a success as far as seen because the very aggravated case which admitted no instrument at first was made comfortable, and undoubtedly would have been cured if a chance had been given to do so, but the patient, a medical man, was disabled to such a degree that he could not travel the considerable distance from another State to my office.

Dr. Thomas next indulges in the statement that only nine out of the hundred cases were reexamined after the lapse of two years from time of last treatment—but the learned gentleman omits to state (perhaps inadvertently?) that thirteen cases were seen after the lapse of three years, six cases after four years, etc., without the occurrence of a relapse and that all hundred cases reported were seen within a period of five years, some remaining still under treatment or observation when those statistics were sent to press. There was no claim that those cases were all cured; the record speaks for itself and shows how far they were improved, or a good reason given why they were not more improved.

The next omission of my analyzer is, that the patients of my first hundred cases mentioned had been under observation from three and a half to eleven years without a relapse, which makes an average time from six to seven years in each case. All these facts were stated plainly in my statistics, which Dr. Thomas had the kindness to analyze, and he will know best why he omitted all these facts, and tried to show that electrolysis is a "delusion and a snare," that it does no good, and that the improvement was due to dilatation, and after all, there were no strictures present, but only spasms! Gracious goodness! who will believe such logic? Not even the incredulous Thomas, who seems not to know that it is an established fact that Galvanism *vel* electrolysis never cures or overcomes a spasmodic stricture; on the contrary it may cause a spasm, which is so distinct and so powerful a contraction that no force, not even a one-horse power, will overcome. Besides, what operator of to-day will not be able to distinguish between a spasm and an organic stricture?

And now in regard to the insinuation as to dilatation *versus* electrolysis. I have clearly stated that the electrolysis enlarges the strictured part by galvanic chemical absorption; that when dilatation and even pressure will not pass a stricture, electrolysis will. This I have often demonstrated in the following manner: The electrode was introduced to the seat of the stricture, and the sur-

geous present were invited to press the instrument through the stricture. They tried to do so, and declared that they could not. Then and there, without the removal of the instrument, electrolysis was used, and in a few minutes, or less time, the same instrument passed the stricture. This has been demonstrated so often and can be proven by reliable witnesses, that the insinuation of dilatation becomes a *fata morgana*, like all the other views of Dr. Thomas.

Dr. Thomas does not state in his report of the single case, how he used the electrolysis, nor does he tell what his most approved apparatus was, and summing up uses the following language: "The remainder, we are told, were well, and we are to accept the assertion, I presume, on faith. . . . If electrolysis in the treatment of urethral strictures is a delusion and a snare, I hope this paper will bring out the experience of those who can speak *ex cathedra* upon the subject, and if the consensus of opinion confirms my own, I then am glad that I have added my feeble effort to assist in pricking the bubble."

Candidly I do not envy any one who can use such language, and I leave it to my readers to surmise what animus has prompted him. My answer to his article is only intended to elicit the truth in regard to facts as they are. These facts of my statistics would be less strong if I were the only man who uses electrolysis successfully, but my method is recognized now all over the world by eminent surgeons who have given excellent records of success from America to Australia and Asia. Skeptics and gentlemen who formerly failed have been converted by facts and become successful operators. The literature on the subject, and hosts of successful operators, are mentioned in an editorial of the *New England Medical Monthly*, December, 1887, which is worthy of perusal, and proves beyond peradventure the success of electrolysis in the treatment of urethral stricture. More evidence comes almost daily from honest workers who formerly were skeptics, or failed at first, and at last relate their successes. Among the latter, as an instance worthy of notice, the valuable article of F. Swinford Edwards, F.R.C.S., Surgeon to the West London Hospital, and Surgeon to the out-patients of St. Peter's Hospital for fistula, etc., (*Medical Press and Circular*, April 11, 1888) from which I take the liberty to quote:

"When, some two and a half years ago, the treatment of urethral stricture by electrolysis was taken up by my friends, Dr. Stevenson and Mr. Bruce Clark, who were led to test its merits from the published reports of a brilliant series of cases by Dr. Newman, of New York, I determined to try it here at St. Peter's, and more especially in cases of resilient, or non-dilatable stricture, which in the usual course would be submitted to some cutting operation, attended possibly by risk of life, at all events necessitating detention in the

hospital for one or more weeks, a loss of time which is of great moment to many and most can ill afford There is yet another reason why I have selected only the severer forms of stricture in which to test the capabilities of this method. It is in order that there should be no room for an objection which I heard raised . . . In the table of cases before you most of the strictures were of long duration, and were multiple. Now these strictures were no myths, nor was their resilient character open to doubt, some of them having been in the hospital under my colleagues, whilst others had been under the care of well-known hospital surgeons. The number of strictures, their calibre and distance from the meatus, has been noted and the result of treatment given, I trust with impartiality. . . . The first I treated with the aid of my friend, Dr. Stevenson, and so struck was I with the result obtained that I hastened to give electrolysis a fair trial at this hospital. The patient had been under me two and a half years previously with three strictures which after a month's treatment I succeeded in dilating to No. 25. In February, 1886, he came to me again for stricture, but on this occasion I was unable to dilate the sub-pubic one by passing bougies. This then I conceived to be a good test case for the new treatment. For the result I have put down cured, as six months afterwards, although he had undergone no treatment in the meantime, I found no sign of stricture after carefully examining his urethra.

The advantages of electrolysis are many, viz.;

1. No confinement is necessary.
 2. No risk of life.
 3. No pain, and only sometimes slight discomfort.
 4. No bleeding.
 5. If unsuccessful it does not interfere with urethrotomy being undertaken forthwith.
 6. and lastly, a cure (permanent) may follow, which is the rarest thing by any other method.
- In electrolysis, as far as I have seen and heard, no risk whatever is run, hence the opinion I have just expressed. I commend it, gentlemen, to your careful consideration."

I have much more proof at my disposal to show the success of electrolysis, but am unwilling to further intrude upon the valuable space of THE JOURNAL. I myself have used this method for nineteen years.

I do not wonder to hear sometimes of failures; as some men will fail in everything, others only in some particulars; and it has been shown that of all the students of medicine, after entering life as physicians, 25 to 45 per cent. are failures. Even "expert genito-urinary surgeons, of world-wide reputation," may fail with electrolysis when not electricians, or even careless in their operations, and even the purchase of an improved electric armamentarium does not make its possessor an elec-

trician. Such reports of failures do not undo or detract from the statistics of hundreds of cases of successes, they will still stand as truths everywhere. Electrolysis as a chemical action, etc., is infallible, though machines and operators may fail.

ON HEADACHES FROM OVERLOOKED CAUSES IN THE NASO-PHARYNX AND EARS.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. GRADLE, M.D.,
OF CHICAGO.

The present communication is intended to call attention to certain attacks of more or less persistent headache, the causes of which are often overlooked. These headaches, due to naso-pharyngeal or aural disorders of which the patient is scarcely conscious, are perhaps not common. But the fact that they do occur and can be more or less readily relieved seems to warrant their description. If the writer has seen a fair number of these somewhat exceptional cases, it is on account of their having been referred to him—often under the impression that their cause might be some refractive or other anomaly of the eyes.

Four types of such disturbances have been seen often enough to be classified as types.

1. The least frequent form of such headaches of occult origin is that of diffuse pain throughout the head, lasting from one to three or even five days. Such an attack may occur again after a variable length of time, or (more rarely) one attack may follow directly after another. Between those instances in which the patients complain of nothing but the headache, and the other extreme in which malaise, bone-ache, and slight rise of temperature characterize the disorder as an acute infection, all gradations can occur. In the last-named class of cases slight throat symptoms point out the hidden origin of the trouble, viz.: circumscribed follicular tonsillitis, or rather follicular angina. For the lesion may be either in the tonsil, or in a lymphatic follicle of the pharynx, or in the pharyngeal tonsil or its lateral expansions. It can be seen in the form of a whitish spot, located in a crypt and surrounded by a narrow congested zone. The more numerous these inflammatory foci the more marked are the febrile symptoms, and the more noticeable the local disturbances, while a single spot may not make itself felt in any way but by headache.

Although each attack is self-limited in course, its duration can be shortened by brushing with a strong solution of nitrate of silver.

2. A second more common type of headache is a dull occipital pain, lasting only perhaps some hours or days, but frequently returning. It is oc-

casioned by enlargement of the pharyngeal tonsil in the form of adenoid vegetations. It occurs especially during the congestion started by a fresh "cold," but at other times as well. I have met with it only in children. Any extensive glandular hypertrophy at the roof of the pharynx can scarcely be overlooked by an attentive physician. But a minor degree of enlargement in an otherwise healthy child may give rise to no symptoms but those of impeded nasal respiration at night, and may hence escape detection. The treatment is as simple as it is efficacious, viz.: operative removal of the pharyngeal tonsil.

3. Headaches due to hypertrophy of the nasal mucous membrane have come under my observation a limited number of times, but always in individuals either of a neurotic type or run down in health from overwork or worry. The pain was either frontal or diffuse, not very severe and not constant, but increased by excitement or mental work. The nasal lesion consisted in hypertrophy of the mucous membrane, especially on the middle turbinated bone, from the free edge of which the swollen membrane protruded as if it were too large for the bony frame. In some of the cases distinct polypi were present. Catarrhal symptoms, or at least catarrhal secretions, are not a necessary feature of this condition. Some of the patients, indeed, scarcely paid any attention to their nasal symptoms. I have generally found that where true hypertrophy of the mucous membrane predominates, the vascular irritability and permanent enlargement of the submucous cavernous tissue are not very marked. The nasal lesion can be cured by frequent spraying with nitrate of silver solution, and in proportion as the nose improves, the headaches diminish. Wherever the mucous membrane projects in polypoid form, it is of course the quickest way to remove it with the hot or cold snare.

I will not refer at present to the various forms of headache associated with the condition of irritable nose. For in that form of trouble in which there is more or less enlargement of the cavernous tissue and consequently marked—though it be temporary—obstruction of the nasal passages, the patient will himself call the attention of the physician to the state of his nose.

4. A fourth type of almost continuous headache I have met with in children, dependent on diminished patency of the Eustachian tubes. When the hearing is not impaired a fairly intelligent child may suffer from a feeling of fullness in the ears without ever complaining of its ears. Occasionally the obstruction of the Eustachian tube, and subsequent reduction of intra-tympanic pressure, gives rise to persistent headaches, which stop at once on inflating the middle ears. If the Eustachian obstruction be one-sided the child notices a difference between the two ears. But if both Eustachian tubes are involved without

marked impairment of hearing, the ear trouble may not be suspected, and it is only after inflation that the child feels that its ears are now "more natural" than they were before. Such slight Eustachian obstruction, and the headaches dependent thereon, can be readily cured in children by a few inflations, either by Pollitzer's method or, still better, by means of the Eustachian catheter. The naso-pharynx should, of course, receive due attention, in order to prevent a return of the Eustachian obstruction.

Central Music Hall, Chicago.

A SYSTEM OF FREE NURSING AS ORGANIZED IN PHILADELPHIA.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

I desire to call the attention of this Association to this system of free nursing because I regard it as a most valuable factor in the proper treatment of the sick poor; as a necessary lesson to the lower classes in cleanliness and the care of the sick; as the most efficient aid to the surgeon in non-paying practice, and because I hope that the idea suggested may prove to be of practical benefit to the profession in cities and towns not blessed with suitable institutions for the proper care of the sick poor.

The Visiting Nurse Society, of Philadelphia, was organized a little over two years ago by a few charitable ladies of this city for the purpose, as their charter reads, "of furnishing visiting nurses to those unable to secure skilled attendance in time of illness, to teach cleanliness and the proper care of the sick." It is supported by voluntary contributions and such small amounts as the patients may be able to pay, and its last report shows a remarkable amount of practical benevolence secured by the outlay of a very small sum of money. The Society in the beginning employed a trained nurse with one or two assistants, who were also pupils. Additional nurses were employed as necessity arose until the staff now consists of seven nurses and assistants and one maternity nurse whose work is confined to that specialty. Special nurses are provided for contagious diseases as they may be required, the regular staff not coming in contact with such cases. The Society was very fortunate in the selection of their head-nurse, who is a trained nurse of more than ordinary ability, both in practicing and teaching her profession.

The assistants are all young, healthy women, selected for their peculiar qualifications and carefully trained under the supervision of the head nurse. In cases demanding immediate operation

these nurses make all preparations at the shortest possible notice, viz.: thorough cleansing of the room and person of the patient, often supplying fresh body and bed linen, one or more nurses to assist in the operation, and one to care for the patient during the subsequent treatment. I have known these nurses to go in an attic or cellar in the heart of the slums of the city, the rooms reeking with filth and overrun with vermin. The patients, fit inhabitants of their homes, destitute of the bare necessities of life, not having even a receptacle in which to boil water, and often dependent on their neighbors for food and fuel. In a few hours the nurses have cleaned the room, supplied the necessary furniture and utensils and prepared the patient for an abdominal section. With such an organization at his command the physician or surgeon has no reason to fear undertaking any case, surgical or medical, at the homes of even the poorest of patients. In the clinic of the female department of the Philadelphia Dispensary, for years I did not attempt to do any of the abdominal work that constantly presented itself because of the lack of such a free system of trained nurses.

Since the organization of this Society we have done over ninety abdominal sections in the alleys and courts of this city, with only one death. And these were not selected cases, but were done because they were imperative. In addition, many general operations of more or less severity, but requiring skilled nursing, have been performed, and in every case the nurses of this Society have proved themselves equal to the occasion. During the past year the Society has cared for 90 surgical cases, out of a general list of 369, necessitating nearly 6000 visits. So far during this year they have attended nearly 200 cases, of which 50 per cent. were surgical.

The medical profession of Philadelphia has reason to congratulate itself in possessing such an efficient corps of assistants, and to wish for the extension of the benevolence to localities less favored.

CALCIFICATION OF THE CARDIAC VALVES. DEATH FROM CEREBRAL EMBOLUS.

Read before the Medical Society of the District of Columbia, April 11, 1888.

BY FREDERICK SOHON, M.D.,
OF WASHINGTON, D. C.

The calcification of the cardiac valves, shown in the specimen presented to-night at the request of several members who have already examined it, derives its interest not from the simple fact that it shows a diseased organ, but from the circumstances attending the patient's life and the manner of his death.

His family and friends give the same account

of the patient. He was perfectly healthy; never was confined to bed by illness; and, as far as could be ascertained, he never complained of any ailment, or any of the many incidental symptoms which usually accompany such a condition of the heart valves. He was white, aged 71 years, and a clerk by occupation. Physically he bore his age well, but he was rather absent-minded.

When seen at 6 o'clock on the evening he was attacked, he did not complain. Later he was found lying on the floor of his office, his position and surroundings pointing to a sudden attack. He had apparently fallen from his chair; his writing was stopped abruptly; and it was said he vomited his tobacco. When raised he seemed to look at the person with one eye, while the other quivered and wandered. He attempted to raise his arm, but was unable to do so. When spoken to he uttered disjointed sounds, as if trying to speak, but could not advance his tongue, although he swallowed medicine mechanically.

He was brought to the Emergency Hospital at 7:45 P.M., totally unconscious. Superficial circulation was below normal; the pulse quick and fairly strong, with a rate of 65; respiration labored and slow, without marked stertor, the noise emitted being of a sighing character. The breath was cool and odorless; the eyes fixed, and the pupils normal in size and non-responsive. The limbs responded to the prick of a pin. Muscular tremors were constant and lasting, and fluctuated in intensity. Auscultation of the chest, interfered with by the tremors, failed to disclose abnormalities in the sound of the heart or lungs. Urine was abundant, slightly alkaline, pale, and showed albumen. Attempts to vomit appeared to be made. The bowels were not evacuated previous to the administration of an enema. About two hours and a half after the patient was brought to the hospital there was a sudden and fatal exhaustion, the heart continuing to flutter after respiration ceased.

The post-mortem examination was made twelve hours after death. Rigidity was still strong. The body was found to be well nourished, and rather muscular for its age. The pleura was normal; the lungs normal in structure, crepitating all over, the section showing congestion and exuding blood. The stomach was empty and its veins turgid; the liver enlarged and congested, as were all the abdominal organs. The kidneys were about $3\frac{1}{4} \times 1\frac{1}{4}$ inches, red, congested, and moderately hard; the capsule stripped easily, showing the exposed surface smooth; the renal arteries were tough and atheromatous. The right kidney had a small cyst. The brain dura was normal, the sinuses overfilled with blood; the left lateral ventricle filled with dark soft coagula, supposed, after careful search, to be due to laceration of that side of the brain by the chisel; the other ventricles contained neither blood nor appreciable

amount of fluid. The brain was slightly pale, but of good consistency; the arteries at the base, including the vertebral, were thickly studded with atheromatous patches (specimen). At the first division of the right posterior cerebral a hard freely movable plug was found. The shock resulting from the sudden interference to the circulation by this plug, in an already poorly nourished brain, was credited as the cause of death.

The heart presented as a specimen weighs 11 ozs. The aortic valves were found barely separated, and immovable either way, these and the mitral allowing a free backward flow of water. The valves are now rigid and covered with large friable warty calcifications. The mitral valves are hard, the aortic curtain being fully $\frac{1}{8}$ of an inch thick, and there are inflammatory patches at their junction. The aorta and coronary openings present atheromatous patches. The left ventricle is not dilated, and only $\frac{1}{2}$ inch in thickness. The auricle is dilated, its walls normal, and the lining opaque and contracted. Neither cavity of the right side is hypertrophied, though the tricuspid valve is slightly thickened.

It is strange that these changes in the heart were not accompanied by any adequate compensation, and yet did not occasion any disorder in the patient's system, so as to materially affect his health, or manifest itself by any of its many symptoms.

MEDICAL PROGRESS.

RADICAL CURE OF INGUINAL HERNIA.—At the late congress of Italian surgeons, March, 1888, PROF. BASSINI described a new method of treatment in inguinal hernia, which he had successfully practiced in 102 cases. He asserts that Wood's and Zerny's operations, which have for their object the closure of the canal by cicatricial tissue, expose the patient to recurrences of the hernia unless a truss is constantly worn. This does not occur in his operation, which restores the inguinal canal to its normal conformation. His procedure is as follows: He lays bare the aponeurosis of the external oblique muscle, and cuts through it from the external ring to the internal. The neck of the hernial sac is then separated from the spermatic cord and tied or sutured at the situation of the internal ring; it is next divided and the ligated part returned to the abdominal cavity. After pushing aside the spermatic cord, the posterior margin of Poupart's ligament is exposed, and the musculo-aponeurotic layer consisting of the internal oblique and transversalis muscles, and the transversalis fascia dissected off from the subserous stratum in such manner that it can be brought in close apposition to the posterior margin of Poupart's ligament.

These parts are united by sutures for a distance of five to seven centimeters, commencing externally at the ileopubic tubercle and extending to the place where the spermatic cord enters the abdominal cavity. The cord is next replaced, and the aponeurosis of the external oblique sewn up, an opening being left that is large enough for the cord to pass through without compression. The cutaneous wound is then closed after providing for drainage. This operation restores the inguinal canal to its natural condition; the internal opening and the posterior wall are new-formed, while the external ring is merely narrowed. Moreover, the canal is restored to its normal oblique position, so that the posterior wall which is pressed forward by the intra-abdominal pressure is supported by the anterior, and the canal thus permanently closed. Another advantage claimed for Bassini's method is that the new-formed posterior wall, which is composed of muscle and aponeurosis is permanent, and will not disappear like the cicatricial plug in Wood's operation. Of the author's 102 cases, 95 were reducible and 7 strangulated herniæ; in 98 the hernia was complete oblique, and in four complete direct.

The following conclusions are formulated:

1. The method is absolutely without danger.
2. It effects a radical cure in a short space of time.
3. It obviates the necessity of wearing a truss, as after the other operative procedures.—*International Journal of Surgery and Antiseptics*, July, 1888.

COMMUNICABILITY OF ACTINOMYCOSIS.—Since Dr. Israel first described actinomycosis in 1878, there have been, according to Dr. BARACZ, of Lemberg, 103 cases published. Dr. Baracz himself has met with two cases which apparently show that there is a possibility of the affection being communicated from one person to another. The first to be affected was a livery-stable keeper. His horses were all, however, in good health, and he had not had charge of any strange horses. When seen by Dr. Baracz on January 9, 1887, a tumor was found on the external surface of the left ramus of the lower jaw; it was about the size of a walnut, fluctuating, easily movable over the bone, and presented an indurated border; the skin over it was inflamed; the teeth were much decayed and very black. Two incisions were made into the tumor, and it was proposed to scrape it thoroughly out. To this, however, the patient refused his consent. The contents on microscopical examination proved to be, as was suspected from the first, of an actinomycotic nature. The wounds were dressed with iodoform, and had quite healed on March 3. On July 15, the fiancée of the former patient presented herself with an abscess of the alveolar process of the left jaw. Behind the abscess was a somewhat tender,

hard tumor, the size of a hen's egg, but flattened, intimately connected with the inferior maxilla. Many of the teeth were gone, and those that remained were very defective. On opening the abscess, half a teaspoonful of pus was obtained, from the examination of which a diagnosis of actinomycosis was established. The wound healed readily. Two months later, a second abscess, the size of a hazel-nut, was found in the gum over the first molar, which was carious. This, as the patient refused to allow it to be opened, broke and ultimately healed without trouble. As there was no microscopical examination of the contents of the second abscess in the case of the young woman, it cannot be regarded as certain that this was of a parasitic nature.—*Lancet*, July 28, 1888.

RESECTION OF THE OPTIC NERVE INSTEAD OF ABLATION OF THE EYEBALL.—DR. CHARLES BELL TAYLOR says: Notwithstanding the great advantages obtained by the substitution of enucleation for the ancient and formidable practice of scooping out the whole contents of the orbit, it is clearly impossible to accept this operation as a final solution of the difficult problem of how to deal with a lost eye. The operation of exenteration, the substitution of a glass vitreous chamber, and the late Mr. Streatfield's proposal to destroy the whole conjunctival surface in certain cases after enucleation, is evidence that modern surgeons are not satisfied with the existing state of things. Atrophy of the orbit and neighboring tissue frequently follows enucleation; the glass eye excites traumatic conjunctivitis, and if the artificial substitute is withheld the orbit retracts. To a working-man the annual expense is onerous, the glass eye a perpetual annoyance, and an empty orbit a constant receptacle of foreign bodies. Nevertheless, when the eye is crushed, contains a foreign body or neoplastic growth, or belongs to a patient who cannot be trusted to take care of himself, or to return if threatened with sympathetic ophthalmia, it is best to remove it. If, however, although sightless, the eye is a good-looking organ, and only affected with neuralgia or recurrent inflammation, or belongs to a patient who refuses enucleation, it is best to excise a portion of the optic nerve, which is quite as effectual as enucleation, and has the great advantage that it does not sacrifice the eyeball, or render an artificial eye necessary.

In thirty-one cases the author has obtained the most gratifying results from this operation. Motion in all directions is perfect, and, in fact, in some of them it is difficult to tell which eye has been done.—*Brit. Med. Jour.*, July 28, 1888.

AMYLENE HYDRATE.—DR. F. GIRTLE, assistant in the Medical Poliklinik at Königsberg, gives additional details on the influence of amylene hy-

hydrate, the new hypnotic introduced by von Mering. He had tried the drug in sixty-one cases of various diseases, with results which fully confirmed those of von Mering and Sacharschmidt. He administered it in the following forms: 1. *R.* Amylene hydrate, 7 grams; distilled water, 40 grams; syr. rubi idæi (raspberry), 30 grams. Sig. Half the quantity to be taken in the evening. 2. *R.* amylen hydrate, 7 grams; aq. menthæ piperitæ, 40 grams; syr. rubi idæi, 30 grams; olei menthæ piperitæ gutt. 1. Sig. One-half the quantity to be taken in the evening. In the case of children the remedy was given in the form of pills or in gelatine capsules as recommended by von Mering. The average dose for adults was 3.5 grams; sometimes smaller doses were sufficient, but at certain times larger doses, such as 6 grams, had to be resorted to. In the case of children under 1 year of age the dose was 2 decigrams, and in older ones 6 decigrams. In almost all cases the desired effect was obtained; deep sleep lasting the whole night supervened in some irritable cases; in other instances, however, the sleep only lasted some hours. In a few cases headache and slight oppression were complained of, but there was no vomiting. The drug was tried in chronic alcoholism, softening of the brain, chronic morphiism, epilepsy in which the night's rest was broken by frequent attacks of cramp; in tuberculosis, gastric ulcer, rheumatism, and tabes; the lancinating pains in the latter disease diminished under the influence of amylen hydrate. Dr. Girtler prefers the drug to chloral hydrate, as it has no injurious effect on the heart.—*Berliner Klinische Wochenschrift*, No. 6, 1888.

CANCER AND TUBERCULOSIS.—LUBARSCH has written a paper in *Virchow's Archiv*, February, 1888, on "Primary Cancer of the Ileum," in which he comments on the simultaneous presence of cancer and tuberculosis. He has examined two cases of cancer of the ileum, which he has carefully compared with œdematous polypoid tumors of the small intestine. He comes to the conclusion that cylindroma of the intestine may be truly carcinomatous; that primary cancer of the ileum arises from Lieberkühn's follicles; and that in epithelial new growths, not otherwise cancerous, ingrowths of epithelial cells, atypical in that they bear no basement membrane, are sometimes to be detected. Lubarsch then reviews at great length the various theories on the possible relations of cancer and tubercle. He believes that their precise relation is very difficult to define in any practical manner; for the different ages at which each disease appears make their coincidence very rare. The theory that cancer of any particular organ predisposes it to tubercle, as Lebert asserted in respect to the œsophagus, is not proved. In cancerous subjects, as in phthisis, acute forms of infections are relatively rarer than in persons

free from cancer. Tuberculous affections may, it cannot be denied, favor the development of a cancer, just as carcinoma frequently appears on an area exposed to chronic irritation. Both of Lubarsch's cases were middle-aged men, and in both "peribronchitis caseosa" and other evidences of tubercle were detected after death.

INFLUENCE OF NUTRITION ON MOTHER'S MILK.—ZALESKI found that a portion of the milk taken from a wet-nurse contained 6 per cent. of fat—double the usual quantity. The child suckled by this nurse was in a very bad state of nutrition, suffered from diarrhœa and loss of weight, and the milk given it was scarcely digestible. Zaleski believed that these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air led to a diminution of the quantity of fat in the milk and an increase in milk-sugar. From that time the child began to improve, and thrived well. The conclusions drawn from this case, and from experiments upon cows and other animals, were:

1. Woman's milk which is very rich in fat can have a very harmful effect upon the nutrition of a child who feeds upon it.
2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors.
3. By proper diet and nutriment a desired condition of the milk which is indispensable for the proper nutrition of the child can be obtained within certain limits.
4. The influence of the general condition upon the milk supply is the same in human beings as in animals.
5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.—*Centralbl. für Gynäk.*, May 26, 1888.

INFLUENCE OF DRUGS TAKEN BY NURSES UPON NURSINGS.—FEHLING has made investigations upon this subject as follows:

Soluble substances pass from the blood into the milk. Sodium salicylate became dangerous to an infant after its nurse had taken 45 grains; iodide of potassium may be given in daily doses of 3 grains without injury; it was found in the milk twenty-four hours after the nurse ceased to take it. Potassium ferrocyanide does not pass readily into the milk.

Iodoform, even when applied externally to the mother, passes very readily into the blood, and affects the child more powerfully than when it is

applied to lesions upon the child. Mercurials given to the mother do not affect the child readily.

Regarding narcotics, twenty-five drops of tincture of opium (German Phar.) did not affect the child; he concludes that from one-tenth to three-tenths of a grain of morphia may be given at a dose with safety to the child; from 20 to 40 grains of chloral may be likewise given. If the breath was withheld for one and a half or two hours after these doses no effects on the child were observed. Atropia affects the child very readily and powerfully.

Fehling experimented with citric acid, mineral acids and vinegar, finding that their use does not affect the child; the normal alkalinity of the milk remains undisturbed. No restriction in this direction should be put on mothers' diet.

As to the influence of fever upon the milk, the septic-fevers counter-indicate nursing, because the milk ducts and secretion are infected with micrococci. The child should be at once taken from the breast in these cases. In non-septic fevers the child should nurse so long as the secretion remains, and simple means should be used to abate the mother's fever.—*Medical Press*, May 9, 1888.

THE EXPLORING NEEDLE IN DIAGNOSIS.—DR. HERMANN M. BIGGS, at the close of a paper on the accidents incidental to the use of the exploring needle in diagnosis, draws the following conclusions:

1. The employment of the exploring needle is not infrequently attended by considerable danger, and a number of deaths have directly resulted from its use.

2. The indiscriminate, careless, and routine resort to exploration with a needle should be condemned. This procedure should not be resorted to without careful consideration of the conditions obtaining in each case, and the results that may follow the puncture. The site for the puncture should be thoughtfully chosen, the puncture carefully made with complete antiseptic precautions, and the smallest needle that will answer the purpose employed.

3. The puncture of collections of fluids with tense walls in relation with serous surfaces should be, as far as possible, avoided, and, if it is resorted to, sufficient fluid should be withdrawn to relieve the tension upon the walls of the sac. In many cases certainly an exploratory operation would be attended by less danger.

4. In the introduction of the needle into deeply seated infectious matter the nature of the intervening tissue should be carefully considered.

5. The needle before use should always be thoroughly disinfected, preferably by heating in the flame of an alcohol lamp or a Bunsen burner.

6. The skin where the puncture is to be made

should be rendered thoroughly aseptic by first scrubbing with soap and water, and then washing with an antiseptic solution.

7. The dangers attending the use of this valuable adjuvant in diagnosis should not in the slightest interfere with its employment in properly selected cases, where due precautions are observed as to its use.—*N. Y. Medical Journal*, August 18, 1888.

ointment of the NITRATE OF MERCURY IN BOILS AND FELONS.—During the last six years DR. ROBERT KENNER has used successfully this preparation as an abortifacient of boils and felons. He claims that through its agency he has been able to abort nearly all cases that came under his care before suppuration had commenced. The application of the ointment is not painful, and in about twelve hours is followed by a peculiar drawing sensation, after which there is a complete cessation of all uneasiness. In treating felons the entire finger should be covered with a coating of the ointment about one-eighth of an inch thick, and then enveloped in a piece of thick sticking-plaster. This dressing is allowed to remain for twenty-four hours, after which time further treatment is unnecessary.—*Therap. Gaz.*, June, 1888.

MASSAGE IN EMBOLISM OF THE RETINAL ARTERY.—At the meeting of the Ophthalmological Society of the United Kingdom, on July 6, DR. MULES related the case of a young woman, aged twenty-one, who perceived a blank over a portion of the upper segment of her right visual field. Within an hour she was at the Manchester Eye Hospital. Her right visual field was found contracted above. Seen under direct ophthalmoscopic examination, the fundus showed a blocked lower retinal artery, the clot, which was colorless, being visible, and extending from the entrance on the disc to the first bifurcation; the plugged vessel looked as if it had been stuffed with cotton wool. The retina was slightly oedematous. Massage was tried, and the clot disappeared, sight at once improved, and the vessel was seen well filled.—*British Med. Jour.*, July 21, 1888.

CHRONIC ABSCESS IN THE STUMP AFTER TONSILLOTOMY.—NOQUET reports this rare case: The patient was a married woman, æt. 20 years. In infancy she had been the subject of hypertrophy of the tonsils. The right tonsil was removed when the patient was six years old, and the left about six months before she came under treatment. The left stump was very red and markedly hypertrophied at the border of the palatine folds, and on pressure pus exuded from a fistula. About a teaspoonful of pus was evacuated by an incision with the galvano-cautery, and after several cauterizations the patient was cured.—*Revue Mens. de Laryngologie*, July, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 8, 1888.

THE MEDICAL EXAMINING BOARD OF
VIRGINIA.

At the examinations held by this Board in April, 1888, there were 34 applicants, 1 of whom withdrew. Of the remaining 33, 26 passed and 7 were rejected—22.22 per cent. Of the 33 applicants 30 were graduates; of the 7 rejected all were graduates; of the 3 undergraduates all passed. Three colored students applied, and 2 passed. The 30 graduates came from 11 colleges; from 6 colleges all the applicants, 21 in number, passed; from 5 colleges 7 out of 12 applicants—or 58.33 per cent.—were rejected.

The last report of the Virginia Examining Board gives a list of the colleges from which graduates have come before it for examination. The table shows that since the organization of the Board, January 1, 1885, there have been 223 applicants in all, 49 being rejected—21.97 per cent. Of the applicants 212 were graduates; 45 were rejected—21.69 per cent. There were 11 non-graduate applicants, 4 of whom were rejected—36.36 per cent.—and 2 had not completed their examinations at the time of the report. In the table are given the names of 27 colleges from which applicants have come before the Board; excluding the University of Heidelberg, we have 26 American colleges; 13 of these sent 51 applicants, all of whom passed; 13 others sent 156 applicants, with an average of 34.73 per cent. of each rejected—more than one-third.

Following is the rejected-percentage list: Medical College of Virginia, 54 applicants, 7 rejected, 12.98 per cent.; University of Maryland, 33, rejected 8, 24.24 per cent.; College of Physicians and Surgeons of Baltimore, 33, 10 rejected, 30.3 per cent.; Jefferson Medical College, 12, rejected 3, 25 per cent.; Bellevue Hospital Medical College and the University of the City of New York, 5 each, rejected 1 each, 20 per cent.; Vanderbilt University, 3, 1 rejected, 33.33 per cent.; Medical Department of Howard University, 7, rejected 6, 85.71 per cent.; Louisville Medical College and Detroit Medical College, 2 each, 1 each rejected, 50 per cent.; Columbus Medical College, 2, Medico-Chirurgical College of Philadelphia, 3, and Cincinnati Medical College, 1, rejected all, 100 per cent. And there are still other interesting figures to be had from the table. Of the 45 rejected graduates, 21, or 46.66 per cent. (from 8 colleges) applied for a second examination; of these 9, or 42.85 per cent., failed a second time. We thus see that the Board held 228 examinations of graduates of American colleges, and rejected 23.68 per cent. Can any one wish for better proof that the colleges (as a class) are not regulating themselves, but need regulation, and a great deal of it.

The percentage of graduates to matriculates in American colleges now averages 30.5. The average for the colleges whose students failed before the Virginia Board is 34.12—3.62 per cent. higher than the general average; for the colleges whose students passed, 28.53—1.97 per cent. lower than average. The colleges whose graduates failed, then, graduate 5.59 per cent. more of their matriculates than the colleges whose graduates passed. Colleges whose graduates failed average 2.07 courses of 22.44 weeks each; others 2.61 courses of 25.84 weeks each. Average for American courses is 24.9 weeks; average course of colleges whose candidates failed is 2.46 weeks less—of others .14 week more, or 3.46 weeks longer than the course of the other colleges.

By leaving out of consideration the colleges from which not more than one candidate came, we have: Colleges all of whose graduates passed, 7; colleges some of whose graduates failed, 12; number of students from former 42; from others 142. Of the last 98 passed, 44 rejected—30.92 per cent.; applied a second time 21, rejected second time 9—42.85 per cent. From these colleges, then, 163 applied, 53 rejected—32.51 per cent.

More specifically, 100 per cent. of second applicants from 4 colleges—total of 7; 100 per cent. failed from 2 colleges—total of 6, 100 and 50 per cent. having previously failed from these colleges; 33.33 and 40 per cent. of second applicant failed from two other colleges. Of the colleges sending more than 1 candidate, graduates of which failed, the per cent. of graduates to matriculates is 34.4; others (7) 28.57—average for United States 30.9.

Counting first and second applicants, we see that 228 graduates were examined, and 54 failed—23.68 per cent. From 1877 to 1887 inclusive there were 36,097 graduates from medical colleges of the United States. They held documents that are considered as entitling to practice in the majority of our States and Territories. But according to the above figures, if these 36,097 had gone before an efficient examining board, 8,300 *would have been rejected!* About 1,400 more than there are physicians in Illinois now! It is appalling to think that in ten years more than twice as many incompetents have been graduated from the medical schools in the United States as there have been graduates during any one of these ten years, except the session of 1881-82, when there were 4,450 graduates. Yet we are told: "Let the medical colleges alone; they will regulate themselves;" "Medical legislation is class legislation;" "It is not in accordance with the spirit of our National institutions and precedents to meddle in these matters." "Supply and demand will regulate the matter;" and other things that are disapproved by the time they are uttered.

It is a matter of regret that the report received from the North Carolina Board of Medical Examiners, a *résumé* of which was published in THE JOURNAL last week, did not contain a table similar to that given in the Virginia report, for it is probable that some interesting information could be obtained from it. A table of this kind, compiled from the reports of all the examining boards in the country, and the reports of State Boards of Health that hold the licensing power, would furnish some interesting reading both for the general public and for the profession, though it would doubtless be distasteful to some professors. It should be borne in mind that both in North Carolina and Virginia the examiners do not know the student or applicant except by the number given by the secretary; so there can be no charge of favoritism. In States in which there are no med-

ical practice acts, nor examining boards, or inefficient ones, we cannot think of any argument that should be more potent with legislators than one of these tables.

It is proper to inquire how the Medical Examining Board of Virginia stands with the profession of the State. There are two medical schools in Virginia; the University, and the Medical College of Virginia. Since the organization of the Board 28 students of the former have come before it, and all passed; 54 students of the latter have applied, and 87.02 per cent. passed; add to this number 3 that applied a second time, all of whom passed, and we have 57 applicants, 50 passed, which raises the percentage to 87.71. When the first movement was made towards securing the present legislative enactments, the Faculties of the University of Virginia and of the Medical College of Virginia heartily endorsed it. But after the Board was organized and began to work with that thoroughness and impartiality that has always characterized its work, oxen began to be gored, though the Board did not know whose they were till the Secretary made his report *after* the results of the examinations had been determined. During the last session of the Virginia Legislature a petition was sent in from the students of the Medical College of Virginia, asking that the graduates of Virginia schools be exempt from the examination before the Board, and be entitled to a license on their diplomas. On January 11, 1888, a majority of the members of the Faculty of this college, and a number of the students, appeared before a committee of the Legislature, to express their entire belief in and approval of examining boards in the abstract, and their sincere disapproval of any examination of the graduates of the Medical College of Virginia. The Faculty of the University of Virginia, however, and its students, and the medical profession of the State of Virginia continue to approve of the Board both in the abstract and the particular concrete.

The petition sent to the Legislature by the students of the Medical College of Virginia is worthy of some notice, as showing to what lengths misguided people can go, and what statements they can make. A round dozen "reasons" were given why the Legislature should grant the petition: *First*, it was stated that the students of Virginia colleges pay more for their tuition than they would have to pay elsewhere; which is untrue, as can

be seen by comparing college catalogues. *Second*, they claimed that the Board was hostile to their institution, notwithstanding the fact that members of the Board know the applicant by number only. *Third*, they cite that some of the States (New York, Maryland, Pennsylvania, Ohio, etc.) have rigid laws in regard to medical practice, but *protect their own medical colleges* by recognizing the diplomas of these colleges as a sufficient guaranty of the graduate's fitness to practice medicine. This is a new application of the much-mooted question of protection. But the statement with regard to the laws in these States is only partly true, and what is true is shown to be wrong in principle and application by the rejected-percentage list given. *Fourth*, it was stated that the Virginia Board was selected at random; it is not and has never been. It is selected by the Medical Society of Virginia, an organization representing the best element of the profession in the State, and more than one-half the profession in the State. The *fifth* "reason" needs no answer. It reads: "The sole object of the law regulating the practice of medicine and surgery is a selfish one—*i. e.*, to prevent competition. Medicine is studied and practiced for the sake of profit and gain, and not for 'sweet charity's sake.' . . . Competition is the life of this, as well as of other trades." Sober reason is utterly lost on medical students that can argue in this manner. The *sixth* and *seventh* reasons are that the examinations are a tax on the poor student; but the Board meets when the colleges close, and the fee for the examination is only \$5.

The *eighth*, *ninth*, and *tenth* reasons were that the facilities of the Virginia schools for teaching are excellent, that the graduates of the Virginia colleges have invariably distinguished themselves (until they fell into the hands of the State Board), and that the failure to pass the Board's examination casts a stigma upon the graduate, while to pass it does him no good. Grant all this for a moment; but the following answers by *graduates* before the Virginia Board are sufficient to show that though a stigma may be put upon a graduate when he fails to pass, the people of the State are protected from an incompetent practitioner:

Describe the larynx. *Ans.* The larynx is composed of cartilage. The oesophagus passes through the larynx.

What is the function of the liver? *Ans.* Do not know.

Give tests for arsenic. *Ans.* Sulphuretted hydrogen is one. Don't know rest.

Give test for mercury. *Ans.* Do not remember.

Give dose of tartar emetic. *Ans.* Ten grains.

Give dose of sulphate of atropia. *Ans.* Hypodermically, 10 grains; by mouth 60 grains.

Give dose of corrosive sublimate. *Ans.* One grain.

How would you treat placenta prævia? *Ans.* I don't know what it is.

Give dose of powdered cantharides. *Ans.* Forty grains.

What is the source of iodine? *Ans.* It is dug out of the earth in blocks like iron.

Describe dengue or break-bone fever. *Ans.* By four applicants: A fever that comes on soon after the bones are broken. By one applicant: The patient should be cautioned against moving, for fear the bones should break.

Describe the peritoneum. *Ans.* It is a serious membrane lining the belly, and extending into the chest, covering the heart and lungs.

Admitting only for a moment, and for the sake of argument, that medicine is a trade, as that committee of students would have had the Legislature believe, every one must admit that a tradesman should at least know the names of the tools with which he is to work, and the names, functions, and diseases of the mechanism upon which he is to exercise his trade. Otherwise, he is unfit to be in the trade.

So far as we can learn, the only medical men in Virginia that are opposed to the present law and the Board of Medical Examiners, are those composing the Faculty of the Medical College of Virginia. Doubtless they are warmly supported by the Faculties of some colleges outside the State, as given above. Had not the State Medical Society and the majority of the physicians of the State endorsed the Board and the law creating it, we may be sure that no Legislature would have ever created it. The Board is doing good work, and is impartial in its work; the colleges that are placed in a bad light by the examination statistics of the Board have it in their power to mend matters by doing better work.

MODERN ANTIPYRETICS IN REMITTENT FEVER.

SURGEON P. O. W. HALLEY, of the Indian Medical Service, records some cases, in the *Indian Medical Gazette* of June, that well illustrate the action of some of the recently introduced antipyretics. These cases were nearly all of the adynamic type, and were treated throughout with small doses of tincture of digitalis as a cardiac tonic, and with quinine during the remissions, and stimulants as required. In one case antifebrin pro-

duced a very marked fall of temperature twice, of 5.2° and 4.4° respectively, without causing symptoms of depression otherwise than a slight slowing of the pulse and reduction of pulse-tension. When given in brandy it produced very little depressing effect, and Mr. Halley says that a dose of 7 grains is usually effectual. In a second case, severe and complicated with pneumonia, antifebrin caused less depression than antipyrin, and lowered the temperature as effectually. The average time taken by the antifebrin to lower the temperature was from one to two hours. The effect on the skin was greater than that of antipyrin. The temperature remained down for from 5 or 6 to 8 hours. The urine was slightly increased on one or two occasions, but not markedly so. Neither antifebrin nor antipyrin caused any vomiting nor collapse in these cases.

In summing up as to the value of the modern antipyretics in remittent fever Mr. Halley says that kairin is undoubtedly inferior to the others, inasmuch as in large doses it may produce dangerous depression, and if given in small doses its effects are uncertain. Furthermore, it seems to be pretty clear that part of its action is to cause disintegration of the blood-discs, and it is therefore evidently unfit for continual use. Antifebrin is doubtless superior to antipyrin, both as regards its power of reducing temperature, and the absence of after-effects. Mr. Halley thinks that the routine use of antipyrin in adynamic fevers, especially the severer remittents and typhoid fever, in which there is such proneness to degeneration of the cardiac muscle, must be fraught with great danger, but if given only when the temperature exceeds a certain height it is undoubtedly a useful drug, more especially if the cardiac muscle be kept in tone with small doses of digitalis or strophanthus throughout the disease. When it becomes necessary to use one of these drugs almost continually, he thinks antifebrin is superior to antipyrin for the reasons given.

EDITORIAL NOTES.

PRISON REFORM is needed in the Northern Indiana Prison at Michigan City, if there be any truth in some reports from this place printed in the newspapers last week. An ex-convict, just released, tells a terrible story of suffering, abuse in, and mismanagement of the institution. He

says that the pork furnished the prisoners during the past summer was frequently so badly spoiled that they could not eat it. According to his story medical assistance is not promptly rendered in cases of sickness, one prisoner, who had been in prison for seven years, and who was to have been released in a short time, having died of simple neglect, being found dead on the stone flagging of his cell after having called in vain for assistance. "The severest punishment from which the convict suffers," says the ex-convict, "is hunger and filth." Statements of this kind demand the fullest investigation by the authorities, and if true, some one should be punished and reform instituted.

A MYSTERIOUS DISEASE has appeared in Rogers City, Mich., according to recent dispatches, which say that two weeks ago a mysterious malady attacked several persons in that village, and its ravages have grown to such proportions that a panic has seized upon the people. The disease somewhat resembles cholera, and attacks all classes without regard to the conditions which surround them. The bowels are first affected. This is followed by a black vomit, and ordinarily death ensues in thirty-six hours. There have been as many as nine deaths in a single day, and the disease is spreading. Physicians are wholly at a loss as to how to cope with it, the usual cholera remedies having no appreciable effect. The authorities will have an investigating committee from the University of Michigan look into the cause of the epidemic.

KALA-AZAR is the name of a dread malarious fever that occurs in the districts of Goalpara and the Garo Hills of the Province of Assam. In the last Administration Report it is shown that this disease was the cause of nine out of twelve suicides, and the Chief Commissioner confesses with regret that all that human skill can do seems to be useless in combatting this dreadful disease, and the Deputy Commissioner says: "The miserable lot of a sufferer from kala-azar can hardly be surpassed under any conditions of time or place; treated as the possessor of a contagious and infectious disease, a drone in spite of his will, and his existence as such resented; growing weaker and weaker with each succeeding month, in constant pain, it is not to be surprised that the wretched creature should seek his end."

DEGREES IN SANITARY SCIENCE.—In the United Kingdom the opinion is becoming more prevalent and popular that medical officers of health should hold degrees in sanitary science, in addition to their medical degrees. The University of Madras has now instituted a degree in sanitary science. The candidate for the degree must have passed the examination for the degree of M.B. and C.M., or L.M.S., and must present certificates of having attended courses in hygiene (not less than forty lectures), general pathology (not less than forty lectures), analytical chemistry (practical course of not less than six months) and one course of sanitary engineering. The candidates are examined in organic, inorganic, and practical chemistry, experimental physics, vital statistics, general pathology, including bacteriology, hygiene, sanitation and sanitary engineering, and drawing and mensuration.

TYPHOID DISEASE IN CALDWELL, OHIO.—A dispatch from Caldwell, Ohio, states that for about a month an epidemic disease having some of the characteristics of typhoid and malaria has been prevalent in the town. The population of the place is about 1800. Cases of the disease have occurred in almost every family, and 25 deaths have occurred. Caldwell, it is said, has no drainage to speak of, and it is thought that the disease is due to bad water. The dispatches state that no strangers visiting the town have been attacked. The above death rate in a city the size of Chicago would represent 17600 deaths in a month, or one-sixth of the whole population in a year. Yet some people cannot see the necessity of paying out the money of the people for boards of health.

HUMAN AND ANIMAL BLOOD.—DR. PESERY CEVERA claims that human may be distinguished from animal blood by the following method: If the blood be mixed with a little bile, small crystals are formed which are of different shapes in different species of animals. In man, it is claimed, they are right-angled prisms; in the horse cubes; in pigs right-angled prisms very similar to those seen in rhomboids; in sheep rhomboidal plates; in dogs the same as seen in human blood; and in chickens more or less regular cubes.

AUTOPSY ON POISONED ANIMALS.—The Surgeon-General of the Indian Medical Department

has decided, and the Local Government sustains his decision, that a medical officer should not be called upon to perform an autopsy upon an animal that has been poisoned (to the extent of performing the work with his own hands), but that it is his duty to examine the viscera and report upon the facts; though if a veterinary surgeon can be had it would be more satisfactory to have him perform the duty. The case in point was that of an Assistant Surgeon at Madura, who refused to make an autopsy on a buffalo supposed to have been poisoned, on the ground that he was not a veterinary surgeon.

DR. JOSEPH TEFFT, died at his residence in Elgin, Illinois, August 26, 1888, from Bright's disease, at the age of 76 years. Dr. Tefft graduated in the Medical School at Woodstock, Vt., in 1832, and became one of the first settlers in the town of Elgin in 1835, where he not only acquired an extensive practice in his profession and maintained it for more than fifty years, but he became actively interested in every important interest affecting the community in which he lived, and retained his position as a leading and upright citizen to the time of his death.

DECLINE OF SMALL-POX IN ENGLAND.—DR. HENRY THORNE has called attention to the fact of the gradual decline of small-pox in England in the past 50 years. From 1838 to 1842 the deaths from small-pox in England amounted to 57.2 per 100,000; in 1880-84 the death-rate was 6.5 per 100,000. He thinks that vaccination has not only a direct influence in causing this reduction in the number of victims to small-pox, but that it has also a tendency to decrease the liability to the disease of children of vaccinated parents.

MEDICAL WOMEN IN ENGLAND.—Twelve students of the London Medical School for Women have recently passed the intermediate examination for the M.B. degree of that most exclusive body the University of London, which is ample proof that the London School for Women is doing good work, and that its students are preparing themselves thoroughly for the duties of the profession.

THE LARGE MORTALITY OF CENTENARIANS, as shown by the reports in the daily papers, threatens to leave this country, in a short time, without a single person one hundred years old.

FOREIGN CORRESPONDENCE.

BRITISH MEDICAL ASSOCIATION.

Fifty-Sixth Annual Meeting.

[EDITORIAL CORRESPONDENCE.]

Branches—Members—Financial Condition—Reports of Committees—Scientific Grants Committee—Collective Investigation Committee—The President's Address—Address in Medicine—Dr. MacEwen's Address—The Address in Physiology—The Sections and Section Work—The Entertainments—The Dinner.

The Fifty-sixth Annual Meeting of the British Medical Association was held in the halls and class-rooms of the University of Glasgow, commencing August 7, 1888. As is usual, a regular meeting of the Council was held in the Randolph Hall at 9:30 A.M., for members of the Council only. At 11:30 A.M. the first general meeting of the Association was held in Bute Hall, to hear and act upon the reports of the Council. Dr. J. G. Banks, of Dublin; President for the preceding year, took the Chair, briefly alluded to the prosperous condition of the Association during the year, returned thanks for the honors he had received, and introduced the President-elect, Dr. W. T. Gairdner, of Glasgow, who took the Chair and was greeted with much applause. Dr. Cameron, after a highly eulogistic speech, moved a vote of thanks to Dr. Banks for the able and courteous manner in which he had presided during the past year, which was seconded by Sir Geo. B. MacLeod, and adopted with much enthusiasm. Dr. Thomas Bridgewater, President of the Council, presented a general report of the doings of that body, embracing a variety of topics. Several new branches had been added during the year, one of which was in Ceylon, and one in Nova Scotia. The latter is the first branch formed in British North America and contains thirty-three members. The total number of members on the register of the Association at the beginning of the year was 11,107. Of these 359 have resigned, 132 have died, while 1,649 have been added, making the total number of members at date of the report 12,265. The net increase of 1,158 was mostly from the medical officers of the Army and Navy, who are receiving the active influence of the Association in procuring from Parliament such legislation as will give them proper relative rank and position in their respective departments of military service. The same report gave the total income for the year as £28,680 os. 3d. and the total expenses £26,060 17s. 8d., leaving a balance of £2,619 2s. 8d. Of the total expenditures, £20,285 2s. 4d. were on account of the publication of the *British Medical Journal*. The adoption of the report was moved by Dr. Bridgewater

and seconded by Drs. Holman and Morton, and was adopted without opposition. Dr. Morton took this occasion to urge upon members the duty of attending the several Sections and giving proper attention to the papers that had been prepared with much care by their authors.

Dr. Ernest Hart, Chairman of the Committee on Parliamentary Bills, gave a synopsis of the work done and the various bills and motions pending in Parliament relating to medical matters and moved the adoption of the report of the Committee.

Dr. Farquharson, M.P., in seconding the motion thought the time had come when all the influence possible was needed to sustain the interest of the Medical Department of the Army and Navy. He thought there was danger of the adoption of measures for diminishing the medical staff and lessening its emoluments. To prevent this was more important than the question of relative rank.

Surgeon-Major Ince made some criticisms on the Local Government Bill, mentioned in the report, and regarding the question of military rank in the Army he thought the Association was more likely to do harm than good. After some remarks having the same bearing by Dr. Fitzpatrick the report of the Committee was adopted.

Dr. Norman Kerr, Chairman of the Inebriates' Legislation Committee, made the annual report, showing some improvements in the Act regarding the treatment of inebriates, and much of general interest on the subject. Dr. Long Fox moved the adoption of the report. Dr. Eastwood seconded it, and the report was adopted with applause.

The report of the Scientific Grants Committee was presented by Prof. McKendrick, in the absence of the Chairman, Sir Joseph Lister, and in moving its adoption he said that during the past few years the Association had done good work by the expenditure of small amounts, and very important and valuable contributions had been made to science. Every care was taken to ascertain the nature of the investigations proposed and the qualifications of the gentlemen who made them. The Committee did not limit its operations to the giving of grants to gentlemen in laboratories throughout the country, and it was satisfactory to know that several very important reports had been made by men connected with no great educational or scientific institution, but men engaged in ordinary practice. The money was paid only for apparatus, chemicals, etc. They must not be disappointed at those investigations not leading to the discovery of any great or striking truth. A very large amount of scientific work consisted in the accumulation of details. It was given to only a very few to come upon any striking fact of generalization, but a contribution, however humble, made with the aid of scientific grants, was a contribution to the upbuilding of that temple of

science in which they were all so interested and of which they were all so proud. Surgeon-General Maclean, C.B., seconded the motion, which was carried unanimously. The total amount expended in prosecuting the investigations indicated during the year was £182, or about \$910, and extended aid to twelve investigators.

The report of the Collective Investigation Committee, of which Prof. G. M. Humphrey, of Cambridge, is Chairman, was presented by Dr. Alfred Carpenter, and in moving the adoption of the report he said: "It would be the last general report. Special reports would only be continued until the work in hand had been completed." Dr. Cummings, of Belfast, seconded the motion, which was adopted. This completed the series of reports emanating from the Council, and although an attempt was made to move a resolution on some other subject, it was defeated by an adjournment to 8:30 P.M., when President Gairdner would deliver his address. Although this was the principal general business session for the present annual meeting, it continued only 1½ hours, and was attended by not more than 250 members. Neither the first general session nor any of the subsequent ones were opened by prayer. But as a part of the programme of this first day a special sermon was preached in the cathedral at 3:30 P.M. by the Very Rev. John Caird, D.D., LL.D., Principal and Vice-Chancellor of the University of Glasgow. Although the afternoon was rainy, the large cathedral was crowded, and the sermon was an eloquent and logical defense of the doctrine of spiritual existence as opposed to the prevalent materialistic tendencies of the present time. His text was found in Romans, chapter xi, verse 36: "Of Him and through Him and to Him are all things, to whom be glory forever." The grand old cathedral and the necropolis surrounding it, dating back many centuries, added much to the interest of the occasion.

At 8:30 P.M., the time to which the general morning session had adjourned, the large and elegant Bute Hall was thoroughly filled, embracing many not members of the Association. Dr. Bridgewater, President of the Council, occupied the Chair, and introduced President Gairdner, who was greeted with prolonged applause, on the subsidence of which he proceeded to deliver the Presidential Address. He first gave a brief history of the city of Glasgow and of the development of its commercial and educational interests, and then took up the leading topic of his address, viz.:—"The Physician as a Naturalist." He traced the words physician and physic back through many centuries, and in chaste and eloquent language claimed the true physician to be preëminently a student of nature in its broadest sense. He condemned in severe terms the past influence of theories or dogmas and creeds in both medicine and religion, in doing which he perhaps failed in some

degree to maintain a just discrimination between the legitimate uses and the abuses of creeds of both classes. The address was listened to with profound attention, and called forth the most enthusiastic applause at its close. Sir Andrew Clark, in moving a vote of thanks, gave a brief but highly flattering history of Dr. Gairdner. The motion was seconded by the Lord Provost of the city, and was adopted with three ringing cheers. Without waiting for an adjournment the large audience dispersed, leaving not more than fifty or sixty members near the platform.

Dr. Edmund Waters, who had been cut off by the adjournment of the morning session, now brought forward the following proposition, viz.: "That the Council of the Association be desired to place before the General Medical Council the following resolution passed at the annual meeting held in Dublin in 1887, with the view of obtaining the opinion of the General Medical Council on the subject: 'That the Association is of opinion that the diplomates of the Irish and Scotch Universities and Corporations should possess the same privileges in respect of public appointments that are enjoyed by diplomates of the other divisions of the Kingdom.'"

After an animated discussion, the motion was carried by a large majority.

The second general session of the Association was commenced at 3 P.M. Wednesday in the Bute Hall, President Gairdner in the chair. He in a few appropriate words welcomed the foreign and colonial delegates. On motion of Dr. Thomas Bridgewater, President of the Council, Leeds was designated as the place for the next annual meeting, and Dr. C. G. Wheelhouse, of Leeds, was nominated as the President-elect. The Address in Medicine was then delivered by Dr. Clifford Allbut to a good audience, though the hall was not full. His subject was "The Classification of Diseases by means of Comparative Nosology." By comparative nosology he implied a description founded on the study of diseases as they affect different orders and species of living beings, from the lowest types to the highest or most complex, and also on the comparison of diseases as they affect different races of the human species.

Acknowledging that we had not the facts necessary for attempting a classification on the basis suggested, he proceeded to show that four methods of investigation were necessary for developing the facts desired, namely: *a*, concerning affinities and heredity; *b*, historical, relating to the origin of races and their influence on diseases; *c*, geographical, or the influence of environment; *d*, and the experimental, by which he meant a direct study, chemically and microscopically, of the morbid changes and products in all gradations of living matter. In directing attention to these several fields of inquiry Dr. Allbut presented some important facts and a greater number of interesting

suggestions, but pretty conclusively showed that many generations would yet pass before all the facts necessary for constructing a philosophical classification of diseases, founded on comparative nosology, would be at our command.

The address was listened to with much interest, and elicited a full measure of applause from the audience at its close. The usual vote of thanks was moved by Dr. McCall Anderson and cordially adopted by the audience. The chief part of the audience immediately dispersed, leaving only twenty-five to thirty members in the front seats or standing near by while Dr. W. H. Fitzpatrick moved "that every representative of the Branches attending a Council meeting be paid first-class railway fares to and from out of the funds of the Association." This led to a brief and not very orderly discussion, after which the session adjourned.

The third general meeting was held on Thursday, 9:30 A.M., in the Bute Hall, to hear the Address of Dr. William MacEwen, of Glasgow, "On Recent Investigations in Surgery of the Brain and Spinal Cord." The audience was large and was intensely interested in hearing Dr. MacEwen give an account of his own operative procedures involving the brain and spinal cord. As our present space will not permit us to give a proper analysis of this address, which was perhaps the most important one presented at this annual meeting of the Association, a more extended notice will be reserved for another occasion.

The fourth general meeting was held on the same day, at 3 P.M., in the Bute Hall, when the Address in Surgery was given by Sir G. B. Macleod, M.D., of Glasgow. He gave an interesting and well-written *résumé* of the advancements in the science and art of surgery during the reign of the present Queen, Victoria, *i. e.*, from 1837 to 1887. Being of a strictly historical nature, it naturally enough placed the achievements of Scotch surgeons in the foreground, and, though containing nothing not already well known to those familiar with medical literature, it was so well delivered that it commanded the full attention of the audience and received a most cordial vote of thanks, moved by Sir Spencer Wells and seconded by Dr. Teale, of Leeds.

The fifth and last general meeting was held on Friday, 2:30 P.M., in the Natural Philosophy Class-room instead of the Bute Hall, the President, Professor Gairdner, presiding. The Address in Physiology was given by John G. McKendrick, M.D., Professor of Physiology in the University of Glasgow. His subject was the "Problems of Respiration." He gave a most complete narrative of the progress of discovery relating to the function of respiration from the earliest periods to the present time, illustrating many points by experiments before the audience. Owing to the limited capacity of the class-room,

not more than half of those who desired to do so were able to hear the address, which was one of the most interesting in the series given during the annual meeting. Professor Rutherford, of Edinburgh, moved the vote of thanks, and Professor Roy, of Cambridge, in seconding it, paid a high tribute of praise on the address. It was adopted with enthusiasm and, as on previous similar occasions, the audience immediately retired, leaving not more than ten or fifteen members in the room to attend to those items of business necessary for a final adjournment. *Sections.* Twelve Sections were instituted for this annual meeting, namely: Medicine, Surgery, Obstetric Medicine, Public Medicine, Psychology, Anatomy and Physiology, Pathology, Diseases of Children, Ophthalmology, Otology, Pharmacology and Therapeutics, and Laryngology and Rhinology; all of which were accommodated in the several classrooms of the University. No Section work was done until Wednesday, the second day, from 10:30 A.M. to 2 P.M. The same time was occupied on Thursday, and on Friday from 10:30 A.M. to 1:30 P.M. Several important papers were read in different Sections and questions of much interest were discussed, but, as a rule, the attendance was small. Indeed, except in the first four Sections we have named, the number of members present at any one time was surprisingly small, for the most part varying from six to twenty-five. In the four exceptional Sections, *i. e.*, Medicine, Surgery, Public Medicine and Obstetric Medicine, the attendance in each varied at different times from 175 down to 25. The papers presented and the discussions elicited in the Section of Public Medicine contained many points of great interest to the citizens of Chicago as well as of all other cities in civilized countries. To some of these we shall have occasion to refer in more detail at another time.

The entertainments consisted of a *conversazione* given by the Principal and Professors of the Glasgow University in Bute Hall, on Wednesday evening, and another by the Lord Provost and Magistrates of the city, in the art galleries of the International Exposition, on Friday evening; a garden party by the President and Fellows of the Faculty of Physicians and Surgeons of Glasgow in the Botanic Gardens, on Friday from 4 to 6 P.M., to all of which the ladies were also invited. The usual annual dinner was served in St. Andrew's Hall on Thursday evening, and was attended by a large proportion of the members present at the meeting of the Association. As in previous years, each member paid for his ticket; those desiring wine paid one guinea, those desiring no wine paid 14s. The only difference in the tickets was, on the corner of the first was printed 1 guinea, and on the corner of the other 14s. The holders of each were freely intermingled at the table, only those paying for no wine needed no

wine-glasses at their plates. The dinner was served in excellent style and was accompanied by three kinds of very good music, namely: a band with instruments, one with bagpipes, and an orchestra of singers. The usual number of toasts and speeches closed the entertainment. During the latter part of the evening the spacious gallery was well filled with ladies. No less than eight excursions had been planned for Saturday to different points of historical interest, to any one of which members with their ladies could purchase tickets at reduced rates. The number of members registered as present at this annual meeting was quite equal to the average attendance on previous meetings, and in scientific and practical interest it was fully equal to the one held in Brighton in 1886, where the active workers were mostly English, while here the Scotch workers were equally predominant. The number registered as present from the United States was 21, several of whom participated in the work of some of the Sections.

Glasgow, August 14, 1888.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Congress on Tuberculosis—Dangers of Tuberculous Animals—Tuberculous Meat and Milk—The Contagion of Tuberculosis—Surgical Treatment of Tuberculosis—Early Diagnosis of Tuberculosis—Tuberculosis of the Fowl.

The Congress on Tuberculosis which was lately held in Paris, is looked upon as a very great success, not that there was anything particularly new elicited from the works of the various speakers as a good deal that had been communicated had been known before, but yet it must have been a great satisfaction to the Congress to be enabled to confirm the views of such men as Morgagni, Andral, Laënnec, and others, who had foreseen the infectious nature of tuberculosis. The more recent researches of Professor Villemin and the still more recent discovery of Professor Koch render this point indisputable. M. Chauveau, Professor of Veterinary Medicine at Lyons, who presided over the meetings of the Congress, referred in his address to the researches and works of the School of that city by which the identity of human tuberculosis and bovine tuberculosis, as well as that of the tuberculosis of other animal species was demonstrated beyond doubt, and this transmissibility of the same malady from one species to another, is fertile in practical consequences. This is one reason why the Congress on Tuberculosis will mark in history the achievements of comparative pathology.

It is impossible for me in the limited space of a letter to give even a brief summary of the communications that were made to the Congress. I may, however, concisely refer to some of them.

M. L. H. Petit, the General Secretary of the Congress, observed in his report, "that tuberculosis makes ravages, which are steadily on the increase, in Norway, in Greece, in Turkey, in Asia Minor, in North and South America, as well as in France. This fact excited alarm, a French savant took up the cause and at his suggestion the present Congress was organized, the invitation to which veterinarians and medical men from all parts of the world readily responded, and proved by their presence and communications the importance of the subject they had undertaken to elucidate." M. Petit added, "that it was gratifying to find that French science still had some credit out of France, and in fact the part which it can claim in the progress accomplished since the commencement of the century in this grave question of tuberculosis, is sufficiently great to have inspired confidence in our work in foreign parts as well as in France."

I may observe that none of the views now established on this malady had been neglected: bacteriology, pathological anatomy, physiology, clinical medicine and surgery, hygiene, sanitary police, have each in their turn contributed a precious contingent of documents. The veterinarians, in particular, have contributed in no small measure to elucidate by their very instructive communications the importance of comparative pathology and how the latter may with advantage be utilized in human medicine. They pointed out the dangers incurred by the employment of cow's milk in the bringing up of young children and of the blood which is freshly drawn from oxen and drunk at the slaughter house by anæmical ladies and girls. The members of the congress were unanimous in acknowledging that milk drawn from tuberculous cows should be looked upon with some misgiving, as it is considered virulent and an excellent vehicle for the tubercle bacilli. A great number of cows healthy in appearance are tuberculous. Their milk, their muscular fibre contain bacilli in the proportion of four to sixteen animals given up to the butcher.

M. Nocard, Professor of Veterinary Medicine at Alfort, dwelt on the dangers to which one is exposed by the use of the flesh and milk of tuberculous animals. He stated that it has been urged that if an animal presented tuberculosis in any organ the animal should be seized and considered unfit for food. M. Nocard, however, thought that this radical measure was unnecessary, as one can eat without fear the flesh of tuberculous animals the tubercles of which are limited to the viscera. Even the flesh of animals the tuberculosis of which is generalized would be but exceptionally to be dreaded. At the debate that followed, a large number of the members present did not agree with M. Nocard, and affirmed that the use of the meat, and particularly the milk of tuberculous animals is dangerous. They therefore pro-

posed the complete seizure of the meat of all tuberculous animals instead of the partial seizure which M. Nocard judges sufficient. To exemplify how one may be deceived by external appearances as to whether a cow or an ox may be affected with tuberculosis, and how absolutely impossible it was to affirm before the autopsy whether or not an animal was tuberculous, one of the members recalled that on a Shrove Tuesday, on which occasion a fattened ox is paraded about the streets, presented, after being slaughtered, the most indisputable characters of tuberculosis.

The danger of the use of raw meat which is so much in vogue is sufficiently obvious. The same may be said of raw milk, and the danger attending both may be obviated by simply subjecting them to cooking or boiling. When the milk cannot be boiled, goat's milk should be used instead, as these animals are seldom or never affected with tuberculosis. The same may be said of asses milk.

Professor Cornil has demonstrated, by some interesting experiments, that the contagion of tuberculosis may be effected through the mucous membrane, and by another series of experiments on guinea pigs, he was led to the conclusion that tuberculous inoculation may be effected in sexual intercourse. When the question of infantile polyadenopathy, introduced by Dr. Legroux, of Paris, was being discussed, Dr. Daremberg observed that he had met with several cases of this specific adenopathy concurrently with infectious tuberculous tonsillitis. Children, he remarked, easily contracted this latter affection from their tuberculous parents by their cohabitation with them and also by the act of being kissed by them.

With regard to the surgical therapeutics of tuberculous affections, Dr. Vargas passed in review all the surgical methods directed against tuberculous affections in various parts of the body. In Spain, he said, surgery tended to active measures and to pursue local tuberculoses wherever they originated, even if it were in the brain or lungs.

Dr. Espina y Capo, of Madrid, made a communication on the signs of the early diagnosis of tuberculosis in man. He attributes great importance to the measurements of the chest. When the intermammary space does not exceed 17 or 18 centimetres, when the axillary index does not exceed 72 centimetres, there are great chances that one has not to do with pulmonary tuberculosis. It was generally supposed that tuberculosis may be communicated through the flesh of the common fowl. Dr. Strauss, Professor of Comparative Pathology, at one of the meetings of the Congress made, in presence of the members, an autopsy of two fowls which had ingested, the one during one year, the other for eight months, 50 and 28 kilogrammes respectively of tuberculous sputa, neither the one nor the other presented the least tuberculous lesion, which would prove the

very great power of resistance of the gallinacæ to tuberculous infection.

The Congress concluded its meetings on July 31st, but before doing so the following propositions were voted: 1. All meat from tuberculous animals should be seized. 2. Instructions should be issued to all communes pointing out the dangers of contagion, the precautions to be taken against contagious maladies, against suspicious aliments, etc. 3. A regular system of inspection of dairies should be organized. The President then declared the Congress closed, and announced that the next Congress on tuberculosis will meet in two years.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Fifth District Branch—Tumor, Enclosed in a Membranous Sac, of the Internal Os Uteri—Rupture of the Diaphragm—St. John's Guild Seaside Hospital.

The summer meeting of the Fifth District Branch of the New York State Medical Association was held this year at Babylon, Long Island, the principal town on the Great South Bay, that famous resort of perennial delights to all devotees of sailing, fishing and shooting. The meeting was a pleasant and successful one, though the attendance was not as large as at some of the other gatherings of the Branch; and among the papers read were one on Heart Lesions and Albuminuria, by Dr. J. G. Truax, of New York, and the report of the Removal of a Tumor Enclosed in a Membranous Sac from the Intestinal Os Uteri, by Dr. William Govan, of Stony Point, Rockland County.

In Dr. Govan's case the patient was a married lady 48 years of age, and the mother of six children, who for nearly four years had been confined to bed on account of constant flooding and the debility resulting from these repeated hæmorrhages. In addition, she was suffering from chronic malarial fever. For about two years she had considerable pain and bearing down, and one year after this had commenced a tumor was discovered protruding from the uterus into the vagina; while six months before she was seen by Dr. Govan the tumor, after a movement of the bowels, had protruded from the vulva. On account of the extremely weak and nervous condition of the patient, no satisfactory examination could at first be made. The pulse was 90, and the temperature 102°, and the pain in the lower part of the abdomen so severe that she would not allow herself to be touched. After a few days of supporting and antipyretic treatment, however, an anæsthetic

[1888.]

was administered and a thorough physical examination made. A tumor was found completely filling the vagina, and this was ascertained to consist of a shining mass as large as a child's head at birth, and with a neck attached quite high up in the cervix uteri.

With the assistance of the attending physician, Dr. Govan made an incision with a serrated spoon, as far up as possible around the pedicle, and pushed the chain of an écraseur close up to the attachment of the tumor. The chain having twice broken, he drew the tumor outside of the vulva with a tenaculum, when he found that he had to deal with a membranous sac containing a large hard substance. With the serrated spoon he then cut through the neck of the sac as far up inside the os as he could reach; upon which a large quantity of fluid escaped, and with it a hard tumor about the size and shape of a large turnip, no doubt a myoma. In order to prevent hæmorrhage the vagina was packed with small sponges saturated with a solution of persulphate of iron, and on visiting the patient the next day he found her in excellent condition, no hæmorrhage whatever having occurred. Since the operation, which was performed October 17, 1887, there has been no return of the flooding, and under appropriate tonic treatment the lady has completely regained her health. It was, therefore, a case of long-standing and much suffering, followed by a rapid recovery. In the discussion on the paper Dr. Truax related a similar case occurring in his hospital practice.

Dr. N. W. Leighton presented the report of a case of *Ruptured Diaphragm, with Death by Apnea*. The patient, a lady 28 years of age, to whom he was called in haste, was found to be suffering from severe pain in the epigastrium, nausea and dyspnoea, while her face wore an anxious expression. He learned that she was in her usual health in the morning, had been to church, and afterwards eaten her dinner, a part of which consisted of fried scollops. Supposing that she was suffering from colic in consequence of embarrassed digestion, he ordered some powdered ipecac in a goblet of water, but the patient was apparently unable to swallow it. Thinking that the taste of the ipecac probably aggravated the nausea and increased the difficulty of swallowing, he tried soda in warm water, peppermint and clear warm water; but with the same result. Believing that the dyspnoea was due to gaseous distension of the stomach, and the dysphagia and other nervous manifestations to hysteria, he left the house for a short time, urging the friends of the patient to persist in having her try to swallow.

Dr. Leighton returned in less than half an hour, prepared to administer ether for the relief of the pain and to induce emesis; but, to his surprise, he found his patient dead. He demanded a post-mortem examination, refusing to give a certificate

without it. The autopsy was made about twenty-four hours after death, when an opening was found in the diaphragm, on the left side, through which the stomach and the spleen had entered the left thoracic cavity. The stomach was distended, filling the entire cavity except the spaces occupied by the spleen below and the left lung above, where it was compressed into a mass about the size of a large orange. The walls of the stomach were tense by the pressure of gas within them, and the organ also contained the partially digested meal taken a few hours before death. The heart was pushed to the right of the median line.

The opening through the diaphragm was sufficiently large to admit four fingers into it, side by side. The edges of the ruptured muscle were thickened and rounded, as if cicatrization had occurred a long time before the date of the fatal occurrence; and the hypertrophied margins showed the effort of nature towards compensation for the rupture. The information was elicited from the lady's husband after the examination that she had had a very severe labor about seven years before, and that during the last pains she called out that she "felt something give way." Since that time he said she had had numerous attacks of colic and indigestion with nausea, but was never able to vomit. She was never again pregnant.

It was the conclusion of Dr. Leighton, as well as other medical men present at the autopsy, that the rupture of the diaphragm had originally occurred during the parturition referred to; although it had not appeared to give rise subsequently to any great inconvenience, except the inability to evacuate the stomach when nausea and embarrassed digestion required it. During the fatal attack it was believed that the stomach, by the movements incident to its gaseous distension, was forced through the ruptured diaphragm, and then continued to expand till it forced the diaphragm downward, dragged the spleen into the thoracic cavity, pushed the heart to the right of the median line, and expelled all the air from the left lung. In conclusion Dr. Leighton said that he was not prepared to state to what extent the displacement of the organs took place at death; but there was no doubt in his mind about the entrance of the stomach into the thorax after the patient's last dinner and before her death.

Before the meeting adjourned Dr. E. H. Squibb, of Brooklyn, the Secretary of the Branch, said that it had been hoped to hear read a full report of a case of hydrophobia treated at a Brooklyn hospital last winter; but as the post-mortem examination of the spinal cord had not yet been quite completed, it was thought best to postpone the report until a future meeting, when all the particulars of the case could be presented.

The new wing of the St. John's Guild Seaside Hospital at Cedar Grove, Staten Island, was re-

cently opened with appropriate ceremonies. Almost a hundred invited guests who were present on this occasion went down to the Island on board the floating hospital of the Guild, where they had full opportunity of observing its beneficent work among the sick children of the poor. On behalf of the Hospital Committee Dr. Charles A. Leale formally presented the new wing, which was received by the Guild through its President, Wm. H. Wiley, Esq.; after which remarks were made by other officers of the Guild and by Dr. Moreau Morris, Chief Inspector of the Board of Health's summer corps of physicians, whose work among the tenement houses is so nobly supplemented by that of the Guild. The new wing of the Seaside Hospital, which is now fully equipped for service, is 100 feet long and 25 feet in width, and contains sixty-four cots. This increases the hospital's capacity one-half, so that 205 mothers and children can be received at a time; making the institution the largest of its kind in the world. P. B. P.

The Dinner at the Congress of Physicians and Surgeons.

Dear Sir:—Some complaints having reached the Committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of Physicians and Surgeons to be held in this city next month, I must beg the use of your columns to say that this distribution was in my hands.

The Council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the Committee and not of the Committee.

As it was necessary, after the matter was decided upon, to act quickly, in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer. It was intended that every member of the Congress; that is, every member of any of the constituent Associations, should have an opportunity to subscribe.

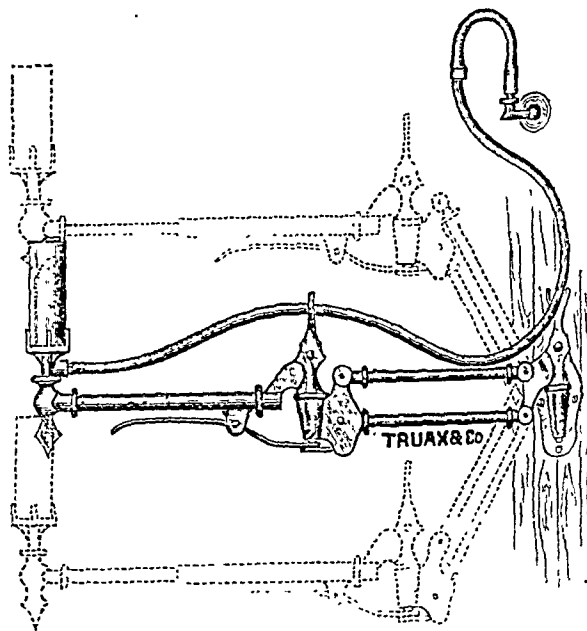
Some circulars were sent directly by me and some of them by such representatives of the Associations as I could most readily get at. It is possible that there may have been accidental omissions, and it is more than possible at this season, when so many gentlemen are absent from home, that some invitations have gone astray. Another possibility, which we know to have been in some cases an absolute fact, is that circulars have been placed in the waste paper basket. This note is intended as an invitation to every member of all the Associations composing the Congress of American Physicians and Surgeons, who wishes to do

so, to send his subscription of \$20 to Dr. S. C. Busey, 1545 I St. N. W., Washington, D.C., for a dinner to be given at Willard's Hotel, in this city, on Monday, September 17, at 7:30 P.M. I am very respectfully,
ROBERT T. EDES.
Washington, August 21, 1888.

NEW INSTRUMENTS.

A NEW ADJUSTABLE LAMP-BRACKET FOR PHYSICIANS.

BY S. S. BISHOP, M.D.,
OF CHICAGO, ILL.



The accompanying cut illustrates the working of an adjustable lamp-bracket I have designed for the use of physicians, especially adapted for eye, ear, nose and throat treatment. It overcomes the difficulty of properly illuminating these parts from any desired direction, and at any given angle. The lamp is easily adjustable to any point lying within a perpendicular line eighteen inches in length, and it will swing through the arc of a circle, having a radius of three feet. It is supplied with joints, parallel arms and an extensible lamp holder in such a manner as to place the lamp either within a few inches of any wall to which it is attached, or at any intermediate point to a distance of three feet from the wall. It is so constructed that, in order to raise or lower the light, you need only to press the thumb and finger on the extension arm and brake beneath so as to close them together; then set the lamp at the desired point; release the brake, and the light remains wherever it is placed. The brake sets automatically, without a jerk, and without loss of motion. These points will be appreciated

by those who have to use light concentrators on the imperfect brackets now in use.

The lamp holder is prepared to receive an argand burner connected with a flexible gas tube, so that the bracket may be attached to a wall or desk in any part of an office or house, and connected with the gas fixtures like an ordinary drop lamp. Or, where there is no gas, a kerosene lamp holder is screwed on instead of a gas burner, and an oil lamp of large size may be used to obtain brilliant illumination. The bracket is strong enough to support a weight of five pounds or more. Its utility can be extended by substituting a tray for the lamp receiver, so as to make it a convenient instrument holder for surgeons and dentists alike. I have employed this bracket in my office a sufficient length of time to demonstrate its superiority over any other that I have been able to find after a most exhaustive search.

719 W. Adams St.

BOOK REVIEWS.

THE PHYSICIANS' LIESURE LIBRARY. ABDOMINAL SURGERY. By HAL C. WYMAN, M.S., M.D., Professor of Surgery and Operative Surgery, Michigan College of Medicine, etc., 8vo, paper, pp. 87. Detroit: George S. Davis. 1888. Chicago: W. T. Keener. Price 25 cts.

In this little book may be found a clear and concise presentation of the present status of elementary and experimental abdominal surgery, and one will not be less interested in this handbook because of having read a more pretentious volume.

We particularly commend to the attention of the student and practitioner the following, from the preface of the book: "How then, can a student not in reach of hospitals and an abundance of opportunities and materials, attain that degree of knowledge which shall give him that confidence so necessary to the conscientious, good surgeon.

"He must do it by providing his own opportunities and material.

"Where can the necessary material be obtained?

"For answer, I say, search the kennels and the hutches about you. Hunt up those oft tried, faithful and most efficient martyrs who give their lives to the cause of science—the dogs and rabbits.

"Vincent Boune's *Epitaphium in Canem* ought to be read and appreciated by every one who undertakes a vivisection.

"Dogs have rendered inestimable aid in evolving the numerous great surgical discoveries which have added so much to the years and comfort of mankind. With the aid of dogs hundreds of ambitious, enthusiastic surgeons have been enabled to make successfully the studies necessary

for an understanding of the means by which nature repairs damage."

There are many men that would gladly do experimental surgical work if they knew how to begin. They can learn not only the beginning but the whole subject of experimental abdominal surgery from this book.

THE SOUTHERN CATTLE PLAGUE (Texas Fever) of the United States, with especial Reference to its Resemblance to Yellow Fever. An Etiological Study. By FRANK S. BILLINGS, Director of the Patho-Biological Laboratory of the State University of Nebraska. 8vo, pp. 141. Lincoln, Neb.: Journal Company, State Printers. 1888.

After a scathing (*sic*) criticism of the definitions of Southern cattle plague of Mr. John Gamgee and Mr. D. E. Salmon, Dr. Billings says: "The only logical conclusion as to this disease is, that it is an *Extra-Organismal-Infectious-Septicæmia*." Dr. Billings claims to have discovered the true germ of the disease, and has a very pretty colored plate of their appearance in the blood. Preliminary to his description of it, however, he wanders off into a page of rather spread-eagle praise of Nebraska and its State University. Every one knows that the West, particularly Nebraska, is moving, and no one is at all inclined to doubt it until the assertions of the fact are unnecessarily repeated. But to return, Dr. Billings thinks, too, that he has discovered the germ of yellow fever, "though my proof is largely of an *a priori* nature." The *a priori* proof was the finding, in some pieces of liver and kidney from a case of yellow fever, organisms "belonging to the same ovoid belted group of organisms" found in cattle plague.

The author adduces practical evidence that the manure must be the chief medium by which infection of the land occurs, and that Southern cattle plague is produced by inoculation with a pure cultivation of its micro-organism. In regard to prophylaxis against the disease Dr. Billings proposes quarantining the Southern cattle until they shall be no longer disease-producing elements, and disinfecting cattle cars whenever they have been used. He thinks there is no question that the disease can be prevented by inoculation.

Altogether, the little book is a curious example of a record of what seems to have been good work, almost buried in verbosity. It contains 138 pages of reading matter; it would be much more readable, and far better as a scientific communication, did it contain only 60 or 70 pages at most. The profusion of unnecessary words is all the more objectionable because they are used in what sinks almost to personal abuse of workers in the same field. The book is dedicated "To Rudolph Virchow, Teacher, Friend, and Master, in whose footsteps I am but an humble follower."

Can imagination picture Virchow making a quotation in a report, and expressing disapproval by "The above is all bosh?" We doubt if Virchow has left footsteps, for any one to follow, in which he shows absolute intolerance and sinks almost to personal abuse of one holding an opinion opposed to his. Dr. Billings has a great field in which to work, and we have no doubt that he will take advantage of his opportunities; we hope, meanwhile, that a more tolerant and scientific spirit will pervade his future writings.

A SYSTEM OF OBSTETRICS. By American Authors. Edited by BARTON COOKE HIRST. Volume 1, 8vo, pp. xiv—808. With a colored Plate and 309 Engravings on wood. Philadelphia: Lea Brothers & Co. 1888.

There can be but little doubt that this work will find the same favor with the profession that has been accorded the "System of Medicine, by American Authors," and the "System of Gynecology," all from the well-known house of Lea Brothers & Co.

This volume contains eight articles—we may say monographs, the first being on the "History of Obstetrics," by Dr. George J. Engelmann, who has already added so much to the history of this department. In regard to the "Physiology and Histology of Ovulation, Menstruation, and Fertilization: the Development of the Embryo," we find the first example of the treatment of this branch of obstetrics, in an obstetrical work, by a physiologist. The reader will scarcely need to be told anything of the character of this paper when it is said that the author is Dr. H. Newell Martin, of Johns Hopkins University. In a paper of 122 pages the editor of the work discusses "The Fœtus: its Development, Anomalies, Monstrosities, Diseases, and Premature Expulsion," abortion, miscarriage, and premature expulsion taking up 22 pages of this paper. Dr. W. W. Jaggard contributes the article on "Pregnancy: its Physiology, Pathology, Signs, and Differential Diagnosis." The "Conduct of Labor, and the Treatment of the Puerperal State" are discussed by Dr. Samuel C. Busey, the "Mechanism of Labor, and the Treatment of Labor based on the Mechanism" by Dr. R. A. F. Penrose, the "Use of Anæsthetics in Labor" by Dr. J. C. Reeve, and the "Anomalies of the Forces in Labor" by Dr. Theophilus Parvin.

One is at a loss to know what to say of this volume, for fear that just and merited praise may be mistaken for flattery. The subjects of some of the papers are discussed in various works on obstetrics, though not to that full extent that is found in this volume. The papers of Drs. Engelmann, Martin, Hirst, and Jaggard, however, and that of Dr. Reeve, are incomparably beyond anything that can be found in obstetrical works. Certainly the editor may be congratu-

lated for having made such a wise selection of his contributors, and the profession may be congratulated that the editor did not assign the subject of his paper to some one else.

DISSOLUTION AND EVOLUTION AND THE SCIENCE OF MEDICINE: An Attempt to Coördinate the necessary facts of Pathology and to establish the first principles of Treatment. By C. PRIFIELD MITCHELL, M.R.C.S., England, etc. 8vo, pp. xvi, 246. London: Longmans, Green & Co. 1888. Chicago: W. T. Keener.

As we have said before, though the remark is not original with us, what is worth doing at all is worth doing well. A book that is worth the printing is worthy of an index, and it is difficult to conceive how any author or any publisher can issue a scientific work without an index, nor do we know of any excuse that can justify such negligence.

Mr. Mitchell is a follower of Mr. Herbert Spencer. One that has read Mr. Spencer's "Synthetic Philosophy," and every one that has not should do so, knows that its sustaining elements are the doctrines of evolution and dissolution. The design of Mr. Mitchell's work "is to inquire whether these may not be made fertilizing principles for large collections of the data of pathology, and thus the means of practice for the physician and surgeon."

To give a meagre idea of the scope of the work in our limited space, it may be explained that the author discusses inflammation and suppuration as dissolutional changes, resolution and repair as evolutionary changes, retrograde metamorphoses as dissolutional changes, the changes induced by animal and vegetable parasites as exemplifying dissolution, neoplasms as exemplifying evolution. Among special diseases acute and chronic Bright's disease, hepatic cirrhosis, and pulmonary inflammations are discussed, as well as locomotor ataxia and other disorders of the nervous system, the fevers, diabetes and allied affections, and diseases of the mind.

To get a further idea of the scope of the book one must read it; and if he cannot agree with all that the author says, he will have at least been interested and become the possessor of many new ideas.

The Physicians' Leisure Library. **DISORDERS OF MENSTRUATION.** By EDWARD W. JENKS, M.D., LL.D., Professor of Gynecology in the Michigan College of Medicine and Surgery. 8vo, pp. 120. Detroit: George S. Davis. 1888. Chicago: W. T. Keener. Paper, 25 cents.

A very good account of the disorders of menstruation, illustrated. The size and make-up of the numbers of the "Leisure Library" make them very convenient, and their price places a whole series easily within the reach of every one.

MISCELLANEOUS.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as The Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18, 19, and 20, it may be proper to state that several years ago the American Surgical Association passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies to cooperate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects by such physicians and surgeons as it may select, to be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes its rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

The guests are men of distinction in some special department of medical science, who have been invited by some one of its constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion the Executive Committee has invited the heads of the Government Bureaux of Medicine, the president of the last International Congress, and several citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man, who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

The meetings of the Congress and of the societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion, will not, however, entitle one to the privileges of a guest.

Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

The Postmaster of this city has arranged facilities for the distribution of mail at the office of registration, in Willard's Hotel. Letters must be addressed to "The Congress of American Physicians and Surgeons."

It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibit of pharmaceutical preparations and medical and surgical appliances.

I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success.

SAMUEL C. BUSBY, M.D.,
Chairman Committee of Arrangements.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet in Pickwick Theatre, Jefferson and Washington Aves., in St. Louis, September 25, 26 and 27, 1888, two weeks later than first announced. This date was selected in order that the cheap railway rates during the Carnival season of St. Louis might be made available. The programme is perfected, and the entire length of the meetings from 9:30 A.M. to 5:30 P.M. each day will be taken up with strong papers, and full and free discussions, there being nothing in the way of extraordinary or irrelevant business, all such matters being settled by committees, without discussion. The three evenings will be consumed by public and private entertainments, and each and every delegate may be assured that constant efforts will be made in the direction of catering to his comfort and enjoyment.

The sentiment animating the Committee of Arrangements and officers of the Association in planning this meeting has been to provide for good, solid scientific work while the sun shines, and at night let recreative effort and pleasure reign. All physicians west of the Alleghany Mountains are invited to become members, eligible to membership under the following from the Constitution:

ART. III. Membership in this Association shall be limited to those members of the profession of medicine who acknowledge allegiance to the American Medical Association by signing its Code of Ethics. No individual who shall be under sentence of expulsion, suspension or disability, from any recognized State, County, District or Local Medical Society, shall be eligible to membership in this Association until said disability shall have been removed. All applications for membership shall be referred to the Committee on Credentials. The annual dues shall be \$3, payable in advance.

For further information, address I. N. Love, M.D., Chairman Committee of Arrangements, Lindell and Grand Aves., St. Louis.

N. B. Kindly inform us prior to September 24 whether or not you can attend. Be sure and secure receipt from local Ticket Agent for full fare paid.

AN ACCIDENT FROM CARELESSNESS.—A very serious accident occurred in Topeka, Kansas, on August 14, by which Dr. Detlor, a veterinary surgeon, was seriously injured. He had undertaken to pulverize nitrate of potassium and sulphur in an iron mortar with an iron pestle! The Topeka Commonwealth gives the following account:

"There was a violent explosion, flame and smoke filled the air, and small bits of iron flew like hail in every direction. These pierced the skin of those who stood about, went into the walls of the office and out through the window, and one piece even struck through a board partition, struck a horse on the opposite side in the hock joint and inflicted a serious wound. The windows were crushed like an egg-shell, the electric lamps and telephone wires were destroyed, and in short the entire contents of the room, including books, papers, medicines, and clothing, were torn, burned, smashed, and mixed up in one indescribable mass, which was made ghastly by a sprinkling of shreds of flesh, pieces of bone, parts of fingers, and every horrible evidence that some one had suffered severely by the explosion. The chief victim was Dr. Detlor. There were several others who suffered from the effects of the explosion, but in a less degree, and some of them very seriously. One of these was Dr. E. D. Shevalier, of Cortlandt, N. Y., who came to Topeka about six months ago, and was practicing with Dr. Detlor. A piece of the iron mortar passed through his left arm, inflicting an ugly and painful but not dangerous wound. F. M. Hopkins,

a student who had been with Dr. Detlor about a year, had his clothing torn from his body, and received some slight scratches. The office in which the explosion occurred was a total wreck."

EFFECT OF NUTRITION UPON THE FUNCTIONS OF THE ORGANS.—The *Kölnische Zeitung* tells how, at a recent review of Russian troops which took place at night, great confusion was caused by inability of large numbers of the soldiers to see, although the light was sufficient for a person of ordinary vision to distinguish even the minutest objects at some distance. Dr. Meissner investigated the matter and demonstrated that the whole cause of the trouble was insufficient nutrition. The review occurred during the Greek fast, when the faithful eat no animal food. Soon after resumption of the usual diet the vision became normal. This disturbance occurs sometimes in insufficiently-fed nursing women.—*National Druggist*.

DR. LEVI J. ALLEMAN died at his home in Boone, Iowa, August 26, 1888, aged 46 years. Dr. Alleman was born in Fayette, N. Y., graduated at the University of New York in 1863, and at once entered the Army as Asst. Surgeon of the First New York Veteran Cavalry. He served during the remainder of the war and was mustered out with his regiment in September, 1865. He settled in Boone, Iowa, immediately after leaving the service, and remained there to the time of his death. His death was due to Bright's disease. He was a member of the American Medical Association.

WATER-PURIFICATION BY LIME.—A man living in the shade of the Catskill Mountains has entered upon a new branch of business. He heard that well water could be purified with lime, so he emptied a bushel and a half into his well and felt blissful and happy. It turned out that, because of the dryness of the season, there was only three feet of water in the well, and ever since his experiment he has been selling a good article of whitewash to his neighbors at two buckets for a cent, and walking a mile and a half to the creek for drinking water for his family.—*New York Graphic*.

DR. THOMAS TAUNTON SABINE, late Professor of Anatomy in the College of Physicians and Surgeons of New York, died on August 23, aged 47 years. As a teacher of Anatomy Dr. Sabine probably had no superior and but few equals in America. As a surgeon he was very successful, being connected with several of the hospitals of New York.

EPIDEMICS AND NEGLECT.—The *Sanitary News* says: There has not been a single epidemic this summer that was not directly traceable to neglect of ordinary sanitary requirements.

PROFESSOR VON ESMARCH, of the University of Kiel, an uncle, by marriage, of the Emperor William II, is in America, having come to attend the Congress of American Physicians and Surgeons at Washington.

DR. GEORGE T. KEMP, late Fellow of Johns Hopkins University has been appointed Associate in Biology and Physiology in the Hoagland Laboratory, Brooklyn.

DR. W. L. BALDWIN, one of the best-known physicians of Jacksonville, Fla., died of yellow fever on September 3. He was a graduate of Albany Medical College, in 1863.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 25, 1888, to August 31, 1888.

Lieut.-Col. Richard H. Alexander, Surgeon, detailed a member of Board to meet at San Carlos, A. T., August 28, to select a site for a new post at that place. Par. 1, S. O. 44, Div. Pacific, August 15, 1888.

Major Chas. H. Alden, Surgeon, detailed as a member of the Board of medical officers convened at U. S. Military Academy, West Point, N. Y., vice Major Charles R. Greenleaf, Surgeon, relieved. Par. 2, S. O. 199, A. G. O., August 28, 1888.

Major Daniel G. Caldwell, Surgeon, to report to the Recorder of the Retiring Board in session at Ft. Leavenworth, Kan., as a witness in the case of Capt. Thomas Sharp, Seventeenth Infantry. Par. 2, S. O. 74, Dept. Platte, August 18, 1888.

Major Daniel G. Caldwell, Surgeon, having completed his duty as witness before Retiring Board, Ft. Leavenworth, Kan., to return to his station, Ft. D. A. Russell, Wyo. Par. 4, S. O. 106, Dept. of the Missouri, August 24, 1888.

Asst. Surgeon Leonard V. Loring, granted leave of absence for one month. Par. 1, S. O. 97, Dept. of Ariz., August 23, 1888.

Capt. Marcus E. Taylor, Asst. Surgeon, granted leave of absence for four months, to take effect about October 15, 1888. Par. 8, S. O. 196, A. G. O., August 24, 1888.

Capt. Henry T. Birmingham, Asst. Surgeon, relieved from duty at Ft. Myer, Va., and ordered to Ft. Klamath, Ore., for duty. Par. 18, S. O. 196, A. G. O., August 24, 1888.

Asst. Surgeon R. R. Ball, U. S. Army, Ft. Riley, Kan., ordered to Ft. Lewis, Col., for temporary duty. Par. 5, S. O. 108, Dept. of the Missouri, August 27, 1888.

Asst. Surgeon Eugene L. Swift, upon being relieved from temporary duty at Ft. Klamath, Ore., to return to his proper station, Ft. Spokane, W. T. Par. 18, S. O. 196, A. G. O., August 24, 1888.

Asst. Surgeon Ogden Rafferty, to proceed from Ft. Clark to the camp at the Dept. rifle range near San Antonio, Tex., and report for temporary duty. Par. 3, S. O. 85, Dept. of Texas, August 15, 1888.

Asst. Surgeon Ogden Rafferty, upon conclusion of Dept. rifle competition will report to the Inspector of rifle practice, Div. of the Missouri, for assignment to duty in connection with the Div. rifle competition as camp surgeon. Par. 4, S. O. 86, Dept. of Tex., August 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 1, 1888.

Asst. Surgeon R. P. Crandall, detached from the "Saratoga" and wait orders.

P. A. Surgeon W. R. DuBose, detached from the "James-town" and to the "Constellation."

W. F. Arnold, Nashville, Tenn., commissioned Asst. Surgeon in the Navy August 18.

George A. Lung, Canandaigua, N. Y., commissioned Asst. Surgeon in the Navy August 18.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending August 27, 1888.

Surgeon H. W. Sawtelle, directed to proceed to San Diego, Cal., and inspect Service at said station. August 17, 1888.

Surgeon W. H. H. Hutton, to proceed to Way Cross, Ga., and assume charge of inspection and fumigation stations. August 18, 1888.

P. A. Surgeon F. M. Urquhart, to report to Surgeon Hutton for special duty. August 19, 1888.

Asst. Surgeon H. D. Geddings, appointed an Asst. Surgeon August 18, 1888. To report to Surgeon Hutton for special duty. August 19, 1888.

Asst. Surgeon C. P. Wertenbaker, appointed an Asst. Surgeon August 18, 1888. Assigned to duty at the port of Norfolk, Va., August 20, 1888.

Asst. Surgeon J. B. Stoner, to proceed to Charleston, S. C., for temporary duty. August 20, 1888.

P. A. Surgeon John Guitéras, to proceed to St. Mary's River, Fla., establish and take command of refuge camp at that point. The camp to be known as Camp Perry. August 22, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 15, 1888.

No. 11.

ORIGINAL ARTICLES.

A PLEA FOR EARLY OPERATIVE INTERFERENCE IN CASES OF OBSCURE PELVIC PAIN; AND RECURRENT ATTACKS OF PELVIC INFLAMMATION IN WOMEN.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY RUFUS B. HALL, M.D.,
OF CINCINNATI, O.

It is quite possible that a large percentage of the cases described in many of the older text books as recurrent attacks of pelvic cellulitis and pelvic peritonitis, and now known and treated as such by many very competent physicians, have their origin in the Fallopian tubes, and is salpingitis in some of its forms, and the pelvic cellulitis and pelvic peritonitis are a secondary complication or an extension of the inflammation from the tubes; producing the well marked attacks of pelvic inflammation described by the old writers.

The cause of these recurrent attacks of pelvic inflammation, and the persistent pain that remained after the first attack, in so many of these cases, was comparatively unknown; until Mr. Lawson Tait made his first operations for the removal of the tube and ovaries for inflammatory diseases. This was the inauguration of a new operation that extended abdominal surgery into the pelvis, thereby greatly enlarging this field of surgery and extending its usefulness.

By this operation we have the means of not only relieving the suffering and pain of these otherwise incurable cases, but of saving the lives of suffering women, scarcely second to the McDowell operation. It is not likely that at the time he made his first operation, he even dreamed of the wonderful results for good, and the saving of human suffering and life the new operation would bring.

This was a step far in advance of the times, and one that attracted the attention of the whole medical world, and from the very nature of the operation, that it should meet with bitter opposition at first from many of the best men in the

medical profession is not surprising. Men with their old ideas, of the pathology of these cases of pelvic inflammation could not understand how the removal of the tubes could cure this disease.

No operation ever had so much vile abuse hurled against it as this one. The specimen removed completely changed the theory of the cause of pelvic inflammation in these cases as well as demonstrated conclusively that the tubes were the seat of the trouble, and while they remained filled with pus, or bound down by firm adhesions, that any exciting cause reproduced an attack of inflammation. And the complete cure of otherwise incurable cases, showed that the operation was justifiable, and like the "truth," the operation will prevail even against the opposition of its enemies. Amongst the most prominent objections to the operation were:

1. The difficulty of diagnosis in all cases.
2. That it unsexed the patient, and that the womanly attributes were lost. That she became coarse and ugly, and that beard grew most luxuriantly upon her heretofore beautiful face; all of which we now know to be base exaggerations.

The difficulty of separating the adhesions deep down in the pelvis, which we were told existed in the majority of these cases to a marked degree.

In answering these objections it may be said that the difficulty of diagnosis is not so great as it appears if we will inquire carefully into the clinical history of each case, which will aid us very much, and by exclusion we will, as a rule, arrive at a correct diagnosis. By vaginal examination, with the patient upon the side, with the thighs and legs well drawn up so the knees nearly touch the breast, an inflamed and distended tube may frequently be felt as a moderately, soft, boggy, irregular, rounded tumor; it is very tender to the touch, and cannot be pushed upward. The uterus is more or less fixed and misplaced, and every effort to replace it is extremely painful to the patient. The fact that in so many of these cases, the uterus is retroflexed and more or less fixed, is the cause of error in diagnosis in so many cases. The case is diagnosed as one of retroflexion of the uterus, and treated not infrequently by pessaries, much to the discomfort and danger of the patient.

Clinically it is impossible to separate the differ-

ent forms of salpingitis. Practically, it makes but little difference whether a case is one of hæmatosalpinx or pyosalpinx for the treatment is the same in one as in the other. In fact, they may be considered as varieties of the first. A large percentage of these cases are septic in their origin, the result of puerperal or gonorrhœal inflammation. And when the septic infection reaches the fimbriæ, it binds them together and to the ovaries, sealing up the opening, and the following inflammation causes them to adhere to the pelvic brim, and the intestine and uterus, thus explaining in a very satisfactory manner the reason why these subjects remain barren.

Notwithstanding this clinical fact has been demonstrated so many times by the specimens removed, we hear objections to the operation by prominent and leading practitioners, that the operation destroys the reproductive powers, yet in the great majority of cases the disease for which the operation is made, has done that years before the operation was suggested or performed.

A woman is necessarily barren who for years has been a sufferer from chronic ovaritis with adherent tubes, and the removal of the diseased structures will make her no worse than she was.

The belief that this operation will destroy the sexual desire of a woman, is founded wholly upon theory and prejudice as demonstrated by the statements of patients after recovery from the operation.

Again the same objections could be raised against ovariectomy for large tumors on equally good grounds, yet we never have this to oppose in that operation.

A woman suffering from this disease is compelled to suspend marital relations, for the act is always painful to her, and the existing pelvic pain is greatly increased after it; or she must endure it only as a matter of duty and with great pain. It is therefore evident that the operation for the removal of the diseased structures will not unsex her, but it will be found that it will enable her to perform her marital duties without her former great suffering, and it will reinstate her in her sexual functions.

And in place of her growing coarse and masculine in appearance, as claimed by many who object to the operation upon theory, the facts are that the womanly attributes are lost no more, after the artificial, than after the natural menopause. The general effect of the operation is the same as that of a woman who has suddenly and easily attained the menopause.

The affective sentiment remains unchanged, and they are none the less good and loving towards husband and friends.

The tone and voice are unaltered, the breasts do not atrophy; and the change is one devoid of all the hideous changes, claimed to occur after operation by those objecting to it.

The changes in the person of the subject are no more marked after this than after the McDowell operation, and the disease requiring it calls for surgical interference just as urgently as does the existence of a large tumor.

In speaking of the difficulty of separating the adhesions, that this difficulty does exist, and that they are the firmest and hardest to overcome encountered in any of the abdominal operations, every one who has had any very extended experience in this operation will testify.

We find not infrequently, and in almost all cases of long standing, after opening the abdominal cavity the pelvic organs completely matted together, and the pelvis roofed over by adherent coils of intestine, which are lifted with much difficulty before detecting the uterus, ovaries or tubes.

The separation of the tubes and ovaries are still more difficult, and if they are the seat of hæmatosis or pyosalpinx they not infrequently burst and spill their contents into the peritoneal cavity.

The uterus is bound down by adhesions which must be broken up in all cases.

The hæmorrhage is very troublesome in some cases, but can be controlled by sponge pressure and hot water.

Notwithstanding all these difficulties are to be overcome in most cases, by proper drainage they recover as rapidly and easily as any other abdominal operation.

In fact, a greater per cent. recover after the operation than after operations for large cystic tumors.

All of these objections must be overcome before the operation will be endorsed by the profession at large, and the great masses of these suffering women can reap the benefit of the only operation that can relieve them.

While the originator of the operation for inflammatory diseases was struggling to enlighten the profession by the revelation of his operating room, he received no little criticism, much of which was unjust and some very personal, from men in high standing in the medical profession.

To this hostile feeling on the part of a few of the leading men of London, early in the history of the operation, is the cause of the feeling of opposition to it, existing among the members of the profession in our own country.

That the great majority of general practitioners are opposed to the operation for the removal of the uterine appendages for chronic inflammation, or are open enemies to it, I am convinced; and do not advise their otherwise incurable patients to have the only operation made that can afford them relief from almost constant suffering and constant danger, or save their lives. Why this should be so, is not difficult to understand when but a few years ago, so many leading specialists were arrayed against it. That this

disease does exist to a greater extent than is generally believed, has been recently shown by Dr. A. H. N. Lewers, and reported in the *British Gynecological Journal*, of August, 1887.

Very contradictory opinions have been held as to the absolute frequency with which dilatation of the tubes from various forms of the disease occurred among the general population. In the *American Journal of Obstetrics*, for June, 1886, Dr. H. Coe published a paper in which he said: "Actual disease of the tubes is far less frequent than is generally believed." . . . "The question of absolute frequency of disease of the tubes is one that can only be settled by observations in the dead house of a general hospital, and with this object in view, Dr. Lewers examined the pelvic organs of a series of 100 consecutive cases in the post-mortem room of the London Hospital, and found diseases of the Fallopian tubes "restricting the expression to pyosalpinx, hæmatosalpinx and hydrosalpinx," was met with in seventeen cases out of 100 examined. In 302 post-mortems of women dying from all causes at Guy's Hospital, the pathologist found twelve cases of distension of the tubes. There were fourteen cases of chronic inflammatory disease about the tubes without distention. In the whole twenty-six, he says in his report it was probable that in seven pelvic inflammation was indirectly the cause of death through the medium of general peritonitis, intestinal obstruction, or in other ways."

It is somewhat a staggering thing to find 17 per cent. of women who die in an institution like the London Hospital, suffering from tubal disease. But the most remarkable thing in the paper of Dr. Lewers was the enormous fatality of these diseases. At the London Hospital it was 24 per cent., and at Guy's it would appear to be about 25 per cent., and the pathologists at the London, Guy's and Middlesex Hospitals showed a death-rate of more than 24 per cent., so the cry for relief by operation can not be gainsaid, especially when results show that these cases can be cured by operation with a mortality not exceeding 2 to 6 per cent. It requires time to demonstrate to the profession the benefits to be derived from the operation. And again, most general practitioners hesitate to advise an operation where to them the diagnosis is so uncertain, and life is put in jeopardy from it, let the risk to life be ever so little, so long as the patient can live without it. Thus months and years of invalid life is passed by their patients (provided the tube does not rupture and cause a fatal attack of peritonitis), who at each menstrual period are laid up eight to twelve days, hardly recovering from one attack until another one is upon them. Thus they are permitted to drift along month after month, suffering, as one of my patients recently operated upon expressed to me, "the torments of

the damned;" while their physicians, forgetful of their responsibility as the medical adviser of these cases, neglect to advise the operation, and if one is suggested it is often opposed until his patient meets the fate which befel the following unfortunate case, which I will briefly narrate:

Mrs. C., æt. 26, married at 22, one year later was confined at full term of gestation, which was followed by peritonitis of a severe type, from which she had a slow recovery. She ever after had pain in the right inguinal region and lower abdomen. This pain was much worse at each menstrual period. She menstruated irregularly both as to time and quantity. She had been treated by three different physicians for a period extending over three years.

They all stated that she had retroflexion of the uterus, with subinvolution, but frankly admitted that they were at a loss to account for the repeated attacks of pelvic inflammation which occurred from three to six times a year, from the least unusual exertion or exposure. These attacks of inflammation were so severe that many times her life was despaired of; and the attacks were becoming more frequent, and it required less exposure to excite one. Sexual intercourse was so painful that it had not been indulged in for more than two years on that account. Three years after the birth of her child I was called to take charge of the case. At that time she was in fair strength and flesh, and could be up and occupy an easy chair about half of the time two weeks out of every four, but could not even so much as walk about the room without aggravating the pain, which would keep her in bed for a day or two. But for two weeks at each menstrual period she could not leave her bed at all. She was accused of hysteria by her lady friends, and received but little sympathy from any but her own family.

By vaginal examination I detected the uterus retroflexed and fixed, pushed to the left side of the pelvis, while the right side was occupied by an irregular immovable mass, the size of a large orange, which was very sensitive to pressure. Pyosalpinx was diagnosed, and an operation for its removal advised, which was refused. After my most positive statement that there was no other known means of cure, I was discharged, and a physician employed who was willing to treat her as she had been treated for three years before, "expectantly." A few weeks later she had another attack of inflammation, from which she died on the fifth day, probably from rupture of the tube, as no post-mortem could be secured.

The other side of the picture is very forcibly depicted by the condensed history of the following cases operated upon:

Case 1.—Mrs. L. A., æt. 32, suffered from an attack of peritonitis after her first confinement in 1876, and for two weeks her life was despaired of.

She regained her strength very slowly, and ever after had pain in the right inguinal region and right side of the abdomen. She miscarried in March, 1878; this was followed by another attack of peritonitis, and it was six months before she could walk on account of the pain in the right side of the abdomen. In March, 1879, she aborted at the end of the sixth week of gestation; this was followed by another attack of peritonitis, and it was two months later before she could leave her bed. After this time she suffered with pain in the left side of the abdomen as well as the right. She never again became pregnant, although she used no means of preventing it. In 1880 her physician used cotton tampons to correct the retroflexion of the uterus, which was followed by a severe attack of peritonitis, which nearly cost her her life, and from that day for five years she was compelled to keep her bed from one-half to two-thirds of the time. She never passed a monthly period that she was not compelled to go to bed, and many of her periods she had attacks of peritonitis, during which her life was despaired of. For two years previous to my first visit she had been confined to her bed almost constantly; the only time she could be up was for one or two days just before her periods. Almost every period during this time was followed by an attack of peritonitis. During all this time she was never a day without pain. She was in a wretched state of exhaustion and emaciation; her weight would not exceed 85 or 90 pounds, when her former weight had been 130 pounds.

An operation for the removal of the tubes was made in September, 1887; the right was densely adherent and contained two ounces of pus. The left was adherent and thickened. She made a good recovery, has regained her usual weight of 130 pounds, and is relieved of all pain and is in perfect health.

Case 2.—Mrs. C. A., æt. 41, after her third confinement, which occurred in December, 1876, suffered from a severe attack of peritonitis, and it was four weeks before she could leave her bed, and two weeks later before she could move about her room. After the attack of peritonitis she suffered great pain in the left inguinal region, which was so severe that she required the daily attendance of her physician for three or four months. During that time all her suffering was located in the left ovarian region, and remained the same regardless of any treatment, except when under the influence of morphia. She was able to sit up part of each day after the first four weeks, but the pain was much worse if she moved about. She had menorrhagia, which continued without interruption for one year after the birth of her child. She was under the care of her physician for three years, but finding that the pain in the side remained the same in spite of the long-continued care, all treatment was discontinued from 1880 to

1883, but she suffered greatly at times from pain in her side, which grew worse from this time forward. She was never one hour without the pain after the attack of peritonitis, in 1876, until after the operation was performed. Fully half of the time for two years previous to the operation she was confined to her room, and much of this time to her bed. Intercourse was so painful and the pelvic pain so much more severe for days after it, that marital relations could not be endured for two years preceding the operation. She never became pregnant after the attack of peritonitis, although she was but thirty years of age at that time and took no precaution whatever to prevent conception. Thus she was practically unsexed as well as a hopeless and suffering invalid, with no hope of ever regaining her health in any other manner except by an operation for the removal of the diseased structures, which was made in September, 1887. On opening the abdomen I found the pelvic organs completely matted together. The left tube was adherent and distended by pus to the size of a small orange. The right tube was firmly adherent and thickened, but did not contain pus. The uterus was bound down in the cul-de-sac by old firm adhesions, which were thoroughly broken up. She made a rapid recovery, and was able to leave her bed on the 18th day, and return to her home on the 27th day entirely relieved of pain. Six months after the operation she said to me that she never once felt the old pain after the operation was made. She is now in perfect health, and only regrets that she did not have the operation performed years before.

Then if it is granted that this disease calls for surgical relief,—and I doubt if any one now disputes that a tube distended by pus can be cured in any other manner—why should the operation be postponed year after year, or until the patient is exhausted from the constant pain, and at the same time is in danger of a fatal termination from complications that will sooner or later surely come?

I believe that the best plan to pursue in these cases, after a period varying from 12 to 18 months of constant and proper care and treatment which is not followed by more than temporary relief, is to advise an operation for removal of the diseased structures, as the safest and best treatment. Safest because a very small per cent. die if they are properly cared for, and best because it is a permanent cure.

281 West Seventh Street.

DR. ROBERT BATTEY, of Rome, Ga.: There is much that I might say in discussion of the very interesting papers which have been read in our hearing, but time forbids that I should do more than offer a few comments upon the paper of Dr. Hall. If it were simply to correct a misapprehension of facts on the part of Dr. Hall, I certainly

should not consume the time of the Section. But I see before me numbers of young practitioners who may also be ignorant of the facts to which I shall call attention.

We are, sir, in the scientific discussions of the American Medical Association, in some sort recording for coming generations the history of American medicine. It therefore behooves us to see that that history is accurately and truthfully given. Dr. Hall alludes to the early struggles of Mr. Lawson Tait for the establishment of the operation in question, and speaks of the great opposition and prejudice which he had to encounter. He also goes on to allude to the hostility of the profession of Great Britain having extended to America, where the battle is being fought over again.

The author of the paper is doubtless ignorant of the fact that the contest to which he alludes was commenced in his own country, not in Great Britain, and by an obscure countryman of his own flesh and blood. That the first successful case put upon record was published in the *Atlanta Med. and Surg. Journal* for September, 1872. The hotly contested battle for the recognition of this operation by the profession was opened in the Medical Association of Georgia, in April, 1873, as appears by the proceedings of that body published in the *Atlanta Med. and Surg. Journal* for April and May, 1873. It was not until the year 1879 that any voice from Great Britain was heard in this contest. The first to speak upon the subject was not Mr. Lawson Tait, of Birmingham, as the author supposes, but Professor Alexander Russell Simpson, of Edinburgh.¹ A short time subsequent Mr. Lawson Tait mentions in the *British Medical Journal* (May 31, 1879, p. 813), three fatal cases of what he calls "removal of normal ovaries." Thus it will be seen that the contest over this operation had been waging in America, in the Medical Association of Georgia, in the Alabama Medical Association, in the American Gynecological Society, in the American Medical Association, and in various medical periodicals in America, for more than six years before a word was heard from Mr. Lawson Tait on this subject.

In the International Medical Congress held in London in 1881, the criticisms which I heard were directed more at Mr. Lawson Tait the operator than at the operation itself. Spencer Wells and Matthews Duncan, who warmly espoused the conservative side, had both subjected patients of their own to the operation and approved it under exceptional conditions. At the meeting of this Congress Mr. Lawson Tait made the astounding discovery that his first case, which he had previously reported dead, had not died, but had actually recovered and been cured by the operation.

The author of the paper makes the just remark that Mr. Lawson Tait himself, in doing the oper-

ation originally, had but little conception of the grand results which were to grow out of it. If he will consult the records of history he will find that the obscure country doctor in Georgia to whom I have alluded had a full conception of these results six or seven years before the voice of Mr. Tait was heard in the matter. Indeed, so little importance did Mr. Tait attach to the operation, by his own showing,² as late as 1879 he had mentioned the matter to but a single individual in the wide world, Dr. Chadwick, of Boston, whose recollection entirely failed to recall any such mention. I submit, in the whole history of medicine and surgery, there is no parallel instance of a great discovery being made, destined to a grand career of usefulness throughout the coming generations, with a clear view of the future results, its author concealing in his own bosom, from his most intimate associates, all intimation of it, hiding his light under a bushel for seven long years, and then timidly lifting its edge and disclosing to the world a faint glimmering of his work; and after nine long years placing his light upon a candlestick and dragging forth the dead from the grave to emblazon the glory of his achievement.

In September, 1872, the Georgia country doctor, in reporting his successful case, says: "As far as my means of information enable me to judge, this operation is unique in the annals of surgery." In April, 1873, he also says, before the Medical Association of Georgia: "Since our last convocation in the city of Columbus I have felt it to be my duty to enter the domain of surgery, and carve out for myself a new pathway through consecrated ground upon which the foot of man has not dared wittingly to tread. . . . What I propose is this: ovariectomy to determine the change of life, for any grave disease which is incurable without it, and which is curable with it. But it may be asked, what necessity is there for surgical interference in these cases? I answer, it is necessary because the pathological conditions for which the remedy is proposed are, 1, destructive of human life; 2, destructive of human health; 3, destructive of human reason; 4, destructive of human happiness; 5, incurable by the recognized resources of our art." So much for America in 1872-73.

In the year 1873, while this operation was agitating the profession of the whole country through its medical journals, Mr. Lawson Tait published his prize essay upon "Diseases of the Ovaries," in which he makes no mention whatever of having done this operation or even of having contemplated it. On the 31st of May, 1879, in the *British Medical Journal*, Mr. Tait, with characteristic modesty, under the heading "Removal of Normal Ovaries," says: "As a small contribution to the history of this proceeding I should like to

¹ *British Medical Journal*, May 24, 1879, p. 763.

² *British Medical Journal*, May 31, 1879, p. 813.

supplement Professor Simpson's paper by the statement that I have removed the ovaries for the arrest of hæmorrhage in cases of myoma three times, in all three with a fatal result. . . . It will thus be seen that the operation was performed in England five days after it was first performed in Germany, and sixteen days before it was performed by Dr. Battey."

For this long silence upon the part of Mr. Tait, withholding from the medical world all knowledge of the original work which he claims to have done, the excuse he gives is, "Between 1872 and 1878 were perilous times."³

The author of the paper dwells upon the change of life as one of the objects sought to be accomplished in this operation. Mr. Tait himself, on the other hand, disclaims any such purpose and says, "I cared nothing about the change of life, I care nothing about it now."⁴

DR. WM. GOODELL, of Philadelphia, while in the main he approved of Dr. Hall's paper, yet in his opinion it was liable to the charge of being too sweeping in its statements, and too likely to mislead the young practitioner into the idea that the knife is the only remedy for ovarian and tubal disease. Now, is this true? Is extirpation the only remedy? Cannot the serum of hydrosalpinx, or the blood in hæmatosalpinx, be spontaneously absorbed? Further, even when pus is present in the tube or the ovary, can it not also be absorbed, or become inspissated and remain caseous and innocuous? Still further, it is not always easy to tell an ovarian cyst from a parovarian cyst, and in such doubtful cases tapping may very properly be invoked to decide the question. Periuterine inflammation leading to abscess is often followed by complete restoration to health, although the ovaries and tubes must always meet with lesions during its existence. The only lesions of the ovaries and tubes which he was disposed to regard as almost but not wholly incurable, were those resulting from gonorrhœal infection. This form of disease follows mainly peritoneal surfaces, and rarely penetrates the planes of areolar tissue, or ends in abscesses which point and burst; but, on the other hand, the adhesions, distortions and dislocations of the womb and of its appendages were of the worst kind, and these evils could rarely be remedied by other than the radical operation. Yet even here he had cured by constitutional measures.

It depends very much on the social position of the woman how she should be treated for tubal and ovarian disease. If she were crippled by the local trouble and were too poor to afford the time or the expense for therapeutic measures, a resort to an operation might be imperative. On the other hand, if she were so situated as to be able to undergo a long and expensive treatment, such as the rest treatment demands, he (Dr. G.), would

almost always advise such a course. By it he had not always succeeded, but by it he had repeatedly restored women to health whose ovaries and tubes were palpably diseased, and had been doomed to the knife by very competent surgeons. Every year women were sent to him to have their appendages removed, who were relieved of all their sufferings by the massage, electricity, and other therapeutic measures of the rest treatment, conjoined with local applications or other local measures.

He was willing to admit that the radical operation was the surer remedy and certainly the more brilliant one. But there were two objections to resorting to it as the only one: Firstly. There was in his mind no doubt that in time the sexual feeling, after the extirpation of the ovaries, became blunted and even extinguished. For a few months after oöphorectomy, not only might this feeling stay constant but, either by a general improvement in the whole organism, or by local irritation to the ovarian nerves, it might become even aggressive. This unexpected increment has been noted by several observers; but as time goes on the reverse takes place. The committee appointed to inquire into the results of Imlach's operations found, in a considerable proportion, that there was a distinct loss of sexual feeling; in some to such an extent as to cause domestic unhappiness.

The second objection to the radical operation lies in the fact that death ensues in a number of cases, the ratio of course varying with the severity of the operation and with the skill of the operator. But life is sweet, and very precious; and the surgeon should consider this when dealing with those whose diseases are not necessarily fatal, but generally are merely annoyances or grievances. Yet so little stress is laid upon this point, and so much upon a single phenomenal success of some highly skilled operator, that every medical graduate with a surgical bent is ambitious to remove the uterine appendages. The result is, that far too often the operation is performed and the woman mutilated, without an adequate reason—indeed, sometimes he feared, without any other reason than that the ovaries were deemed the scapegoats of all woman's ailments—whether mental or physical. Another result, and a sad one to contemplate, is that many lives have been needlessly sacrificed. He himself had had a run, his last one, of twenty-seven cases with but one death. Yet he had keenly felt this single death, because, although the ovaries were greatly diseased by papilloma, and the lady was more or less of an invalid, her life was not in any immediate danger and she would have yet been an attractive member of the home circle.

DR. HALL, in reply to Dr. Goodell's remarks, said: I quite agree in every particular; in fact, I advocated this very plan of treatment in the last sentence but one in my paper, and how the

³ Medical News, July, 1886, p. 26.

⁴ Atlanta Med. and Surg. Journal, March, 1887, p. 34.

doctor could overlook the statement I cannot understand. So far as the statement in reference to the Imlach statistics is concerned, I am convinced that no honest and fair-minded man can read the report of that committee and say that it is an honest and true report of the facts in the case. It was a question of expelling Dr. Imlach from the Staff of the Liverpool Hospital, and not one of an honest and true report of the facts in the matter. In reference to the statement by one of the gentlemen that Tait was careless in the examination of the tubes removed, and would not permit any one witnessing his operations to examine the specimens removed. I must say in justice to Mr. Tait, that during all the long time I was with him, he permitted the most thorough and complete examination of any or all specimens removed.

In reply to Dr. Battey, it appears that he has wholly overlooked the title of my paper "A Plea for Early Operative Interference in cases of *Obscure Pelvic Pain and Recurrent Attacks of Pelvic Inflammation in Women*"—as well as to misunderstand or pervert the sentence referring to the operation. I did not question his right to the priority of "normal ovariectomy," the name he first gave it, which after a time was found not to be broad enough to include all the cases operated upon after it was found that the operation was not restricted to ovaries that were normal. Then the broader term of "Battey's operation" was substituted for the former. His name, as I understand it, continues to be associated by the profession with the operation as performed for the production of an artificial menopause for reflex trouble, or what may be called "neurosis," and *not* for the cure of *inflammatory diseases*. While this name is suitable within the limits he laid down for it, it does not include the more extended procedure of removal of the uterine appendages for *chronic inflammatory diseases* that Tait's name is so intimately associated with. Or we might say the operation on one hand for the *cure of vague nerve symptoms* by the production of an artificial menopause, as against the operation on the other hand for the *relief of pain* and cure of *actual diseases*. The pathology in the two cases is different, the theory upon which the operation is performed in each case is widely divergent from each other, and the clinical histories of the patients, and the technique by which their diseases are proposed to be relieved, presents irreconcilable differences. Until, therefore, Dr. Battey gets the idea out of his mind that there is no difference between the operation that goes by his name and Tait's operation, he will be continually accusing others of appropriating the results of his labors. I made the statement in my paper that Tait was the originator of the operation for the removal of the uterine appendages for *chronic inflammatory diseases*; that I am correct in this statement I am

convinced. Notwithstanding the fact that the distinguished gentleman has occupied more than one hour in discussing the point of priority of "Battey's operation,"—a point that we have always accorded him—and by his abuse and sharp hits at Mr. Tait he has evoked the plaudits of this Society, yet he has not convinced any one that Tait is not the originator of the operation for the removal of the uterine appendages for *inflammatory diseases*. It appears to me a little queer that the Doctor should go wholly outside of my paper and dwell so long upon a point that was not touched upon at all in it. I did not discuss the priority of the operation only so far as it pertained to *inflammatory diseases*.

The question of priority of the operation of removal of the ovaries and tubes not the seat of large tumors, is a question that I did not wish to bring before this Society, as no good could come from the discussion of the subject, and as an American I would much prefer to see America have the honor of it; but this has been made a text for the greater part of the discussion on my paper to-day, wherein Dr. Battey has said that his first operation of August, 1872, antedated Tait's first operation by quite a number of years. Now, how are we to know the facts in this matter, when Tait says in his own writings that his first operation was made before that date? This is a question to be settled between Battey and Tait, not Battey and Hall. When Tait was receiving so much abuse from so many prominent men all over the world for removing the uterine appendages for *chronic inflammatory disease*, a condition that his enemies said only existed in "Birmingham or in his own perverted mind," if Dr. Battey had been an advocate of the operation for inflammatory disease, and had really been making the same operation, at the same time, for the cure of the same class of cases, would he have kept quiet all the time? Did he raise his voice in favor of an operation for these diseases, or in defence of the man who was receiving the abuse of the whole medical world while he was struggling to enlighten us upon this subject? No! I cannot find a word from him or his pen in justification of the operation for these diseases, or in defense of the man until the battle was won. It was Tait who fought the battle, and he will ever stand out as a mountain peak, towering high above all living men; and by all fair-minded men will ever be accorded his just rights in this matter, as the first man who directed the attention of the medical world to the necessities of this operation.

TOWN SCHOOLS IN SWITZERLAND.—The Police Directory of Berne has appointed a special commission to investigate over-pressure, school sanitation, and the whole field of school hygiene.

AN ANTISEPTIC SURGICAL CABINET.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1887.

BY H. J. ANDIS GETZ, M.D.,
MARSHALLTOWN, IA.

It is not my purpose to discuss in detail the merits of antiseptic surgery, when and why to be practiced, although for fourteen years practicing and believing in the utmost cleanliness in the treatment of all wounds, especially where healing without suppuration should be anticipated, avoiding so far as possible the use of chemical agents in the cleansing of fresh wounds, because I believed, as I now do, that the chemical agents, if brought in contact with the surface of the fresh wound, when of sufficient strength to destroy germ life, would also retard or prevent union by first intention. Few, if any, ovariologists longer use the once highly recommended carbolic acid spray immediately over the open abdominal cavity, because believed, or found to be, deleterious to the patient, as well as inconvenient and annoying to the operator and his assistants. In looking over and comparing the instructions of various authors (surgical and gynecological) in reference to the preparation of the apartment in which is to be performed a laparotomy, the instructions, as you well know, are substantially found to be uniform.

Having had occasion in several instances to prepare apartments for ovarian or similar operations, it occurred to me that where laparotomies were indicated, as in rupture of the uterus during labor, in case of gunshot wound of the abdomen, or other injury or condition, requiring the opening or exploration of the abdominal cavity, the recommended removal of all paper from side walls, of whitewashing, and all other disinfecting processes to be carried out, would require much more time than the average patient, under circumstances as just described, could possibly spare. Reasoning thus and remembering that I had read in a comparatively recent publication on gynecology as follows: "It is evident that ovariologists must devise some means by which the air is or can be purified without being innocuous to the wound surface." This led me to further look up the literature upon this subject, in issues to date. Not finding anything that was calculated to fill the above suggested need, I designed the appliance, the construction of which will be now described to you, and also its advantages, conveniences, etc., as they pertain to major surgical operations, more especially in laparotomy, where I believe the most scrupulous antiseptic environment should be instituted.

Description and Construction.—The skeleton or frame of cabinet consists of six poles, six feet long, one inch in diameter and round, and one pole of same thickness seven feet long. These are set up about the window which has been selected

to furnish light. They are held together by a few nails and a few hooks made out of screw eyes, in the manner you here see. One rod is fastened horizontally across the top of window, not less than seven feet from the floor. Into this rod or fastening are placed two screw eyes closed six feet apart, to come at equal distance from the sides of window frame; into each end of two other six foot rods is fastened a screw eye, opened so as to

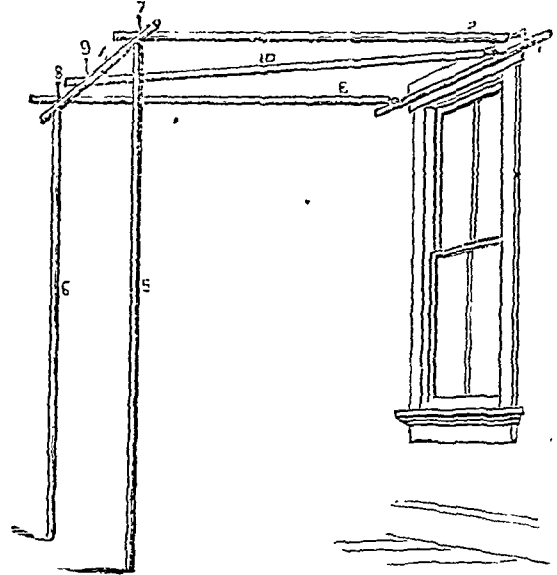


FIGURE 1.

1. Rod with three screw-eyes secured with common screw to top of window frame.

2 and 3. Outside rods for top of cabinet, with small hooks in one end, screw-eyes opened will answer; these hook in screw-eyes in rod 1; the other ends of rods Nos. 2 and 3 rest on rod No. 4, which rests immediately over rods 5 and 6. A hole is bored with a common gimlet through the lower ends of rods Nos. 2 and 3, thence through the outer ends of rod No. 4, and then vertically into the upper ends of rods Nos. 5 and 6; about an 8- or 10-penny wire nail is then placed into the bore to hold the rods in position; nails are shown by figs. 7, 8 and 9 before being sunken into bore; rod 10 is placed diagonally across top of frame and fastened as other rods; this braces firmly the entire frame.

form a hook; these are now hooked into the screw eyes in rods fastened over window, as already described, about six feet from window and just opposite the screw eyes in rod fastened transversely over window are set in a vertical position two rods six feet high; into the upper end of each of these a hole is bored with a gimlet, admitting a common tenpenny wire nail. Upon the top of these upright rods are now placed the rods which have been hooked to the rod over window. A rod is now laid across the top of the two upright rods and a hole bored, of size as just described, through the transverse rod and through the rods sloping from window to uprights, to correspond with the hole in top of upright rods. A rod is now fastened by screw eyes (used in manner as already indicated) diagonally from the transverse rod over window to the transverse rod over uprights, and this secures the frame firmly. We are now prepared to cover the frame, or, rather, supply the antiseptic side walls, top and floor. This is best made from bleached dairy cloth about forty inches wide. Of this, two

widths are necessary to cover the top, floor and each side, except the window. The two widths forming the top covering are sewed together for a distance, reaching from the rod fastened over the window transversely and over the horizontal rod placed over the two upright rods, thence downward to a point about the height of an operating table. This forms the roof or top and the side wall opposite the window. The two lateral side walls are cut of length to reach, and are suspended from the *slanting* rods, attached to upper and lower transverse rods. The floor is covered by same material, especially if there has not been ample time to thoroughly cleanse and disinfect the same or take up carpet.

Prior to suspending the cloth over frame and just before the patient is brought to the operating table, the cloth is dipped in a solution of corrosive

of operating table to floor, an extra piece of the antiseptic cloth. All sides are firmly drawn and secured upon the rods by small hooks fastened into the latter, and upon the floor and side walls by tacks, and at the corners or junctions by pins, except one side wall, where the two widths of cloth are allowed to overlap, and from which the operator and assistants enter and exit. The arrangement upon the interior of the cabinet and about the patient is precisely as when operating without the device. A valvular opening may be made into the side wall of the cabinet, through which may be conveniently passed instruments, etc., by an assistant.

NOTE: To be prepared for all emergencies, there should be six assistants, three of whom must be within the cabinet and three without, one of the latter to administer the anæsthetics,

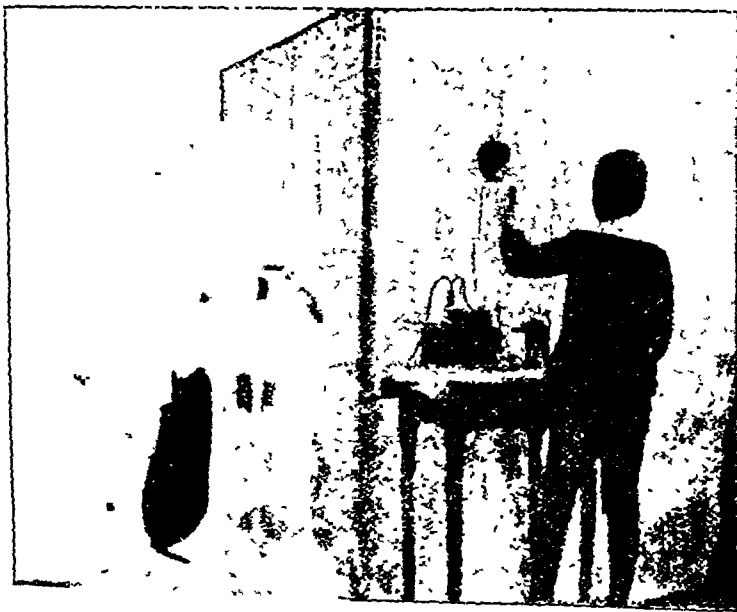


FIGURE 2

sublimite, 1 to 500, or 1 to 1,000; the operating table is so placed under the canopy that the patient's feet shall be toward the window; the patient's head, neck and upper part of thorax shall be outside of canopy opposite window, the side of canopy opposite window, which has been sewed together, and which reaches well to the floor, is now drawn closely down to the patient's chest to the end of the seam, which should now be open sufficiently high to admit of the cloth being firmly drawn over the frame to avoid folds, which would in a large degree deflect the light from the open abdominal cavity, instead of into it as is the case when the cloth is firmly drawn and somewhat arched, and each width is then continued to the floor about each side of the table. There is now drawn from one vertical rod to the other, extending in width from under side

and the other two to make themselves generally useful, by handing to operator or his assistants, through the valvular opening in the side wall of the cabinet, such special instruments, water, etc., as may be needed; or if the operation is prolonged and the antiseptic cloth becomes dry, to maintain its moisture by spraying the selected antiseptic fluid by steam atomizer, or other suitable appliance, from within outward against the cloth, or it may be sprayed from without inward against the cloth, *being careful* not to carry the spray through the cloth into the open abdominal cavity

ADVANTAGES OF THE CABINET.

1. The air is purified by process proving innocuous to the wound surface.

2. It can be always easily and quickly constructed.

3. It is cheap, simple and withal efficient.

4. It admits of a moderate circulation of air, and yet prevents decided currents of air.

5. By it may be used corrosive sublimate, or other germicide, of sufficient strength to be certainly fatal to all germ life, without in the least degree endangering the patient, or being inconvenient or unpleasant to the operator or his assistants.

6. By it is utilized, condensed and reflected all the light to be obtained from window, the abdominal cavity being nicely lighted in all parts, so that the reflecting mirror is not a necessity, even when there is a poor supply of light, on account of a small window or a cloudy day.

7. Operator cannot by accident or intent witness patient's face, so that he is not in any manner disconcerted by the appearance of the patient.

[The cloth should be doubled between the operator and the patient's face.]

8. The assistant who administers the anæsthetics cannot witness the operation, and consequently will be less likely to forget his duty, namely, that of keeping steadily eye and mind upon the patient and effects of the anæsthetics.

9. By its use is prevented largely the circulation of the chloroform or ether-laden atmosphere over the open abdominal cavity. Both agents being highly volatile are cooling and drying in their effects upon the surface with which they come in contact, and both of these conditions are undesirable in laparotomy, the maintenance of warmth and moisture being essential to successful results.

10. It is light and compact, may be easily transported, and can be kept in readiness for use at all times.

11. It may be used to advantage conjointly when all other known antiseptic measures are applied.

12. By its proper application a good antiseptic compartment is furnished, even in a room where carpets, wall paper, etc., etc., are undisturbed, and in this particular especially recommends itself, its moist walls catching particles of dust and germ element which may be in the atmosphere, and the strong solution of corrosive sublimate which is used in moistening the cloth walls of the cabinet must be certainly fatal to germ life when coming in contact.

To further perfect this device, I propose supplying air to the patient, operator and assistants from (as a matter of convenience) the same window from whence is derived the light for operation, without opening the window and without changing in a noticeable degree the temperature of the room, although the outside temperature may be at zero or lower. The objects of the device are:

1. To furnish the patient (in the event of evidences of collapse from the effects of the anæsthetics,

or other cause) promptly an abundant supply of pure air, without changing the temperature of room, and thus proving detrimental to the patient by affecting the open abdomen and the exposed viscera.

The *second* object is to furnish to operator and assistants an abundance of pure air to breathe while they are working in an atmosphere with temperature of high degree, and which is trying and exhausting to operator and assistants, the latter sometimes failing you in the rendering of efficient service at a moment when you most need them. The patient, is supplied, by boring a hole into the lower lateral or lower transverse wide window sash, say three-fourths of an inch in diameter. Into this opening is placed a piece of metal pipe, and to this attached a piece of rubber tubing, which is carried along the floor to a point opposite the patient's head, when it is brought up and secured conveniently near the patient's head. This tube should have a shut-off valve near its end and to the end of tube should be attached a mouth-piece made of hard and soft rubber. This mouth-piece should have a set of valves inlet and outlet, to the outlet valve to be attached another tube identical with that attached to inlet valve. This main inlet and outlet tube can be made to supply and carry off the air for patient and the three assistants outside of the cabinet, and the three assistants and operator within cabinet are provided for in the same manner by a separate set of tubes. From the main tubes, inlet and outlet, are taken smaller tubes, and these of sufficient length to allow operator and assistants to move about with ease; to these small tubes are attached the mouth-pieces, with entrance and exit valves, and the mouthpieces held in place by rubber bands, or other suitable contrivance. The individual supply and exit tubes, are secured one upon either side of the head, in such a manner that they will not in any degree inconvenience the operator or assistants. The main inlet and exit tubes for operator and assistants must always enter from the top of cabinet. In cold weather the iron tube, which is secured in the window sash, and to which at its opposite end is attached the rubber tubing, should be at least eighteen inches in length, and a lamp placed under same to heat the metal tube, and thus warm the air; or a better, although more complicated, device may be used by having a small coil of pipe surrounded by hot water, and a thermometer kept in same, to indicate the temperature of air inhaled. The main exhaling tube is attached to the window sash in any manner most convenient. A convenient mode of attaching these tubes to the window will be found in taking a strip of wood, say four or six inches wide, made to slide one part into the other, similar to the patent window screens, so that it can be readily made to fit a wide or narrow window; this appliance to have the necessary attachments for all en-

trance or exit tubes. The same may be placed into the window, as is most convenient, by raising lower sash or dropping upper one.

204 East Main Street, Marshalltown, Ia.

DR. WELLER VAN HOOK, of Chicago: I would like to inform the gentleman that Dr. Prince, of Illinois, is now using in his daily clinics an apparatus by which he sterilizes all the air used in his operating room. Everything in the room is kept in a constant state of asepsis. The effectiveness of the process has been tested a number of times, he tells me, by introducing into the room slips of sterilized gelatine, and seeing whether colonies of germs would grow upon them or not.

I would suggest that a single layer of gauze, like that used in Dr. Getz' cabinet, is not sufficient in thickness to prevent the passage of micro-organisms through it. This might be attained by means of a spray kept playing on the gauze all the time.

No operating room will ever be made aseptic, however, for the reason that every operator carries with him, either in his nostrils or in his mouth, enough germs to poison the entire mass of humanity. The only reason that our patients are protected is because the germs are enclosed in masses of decaying food, and thus prevented from being carried into the wound. The atmosphere which is carried from the lungs in expiration is in a comparatively aseptic condition. This is due to the fact that the air has been made sterile by means of contact with the moist mucous membrane of the respiratory passages.

DR. GETZ remarked that he made provision for the sterilizing of air in his cabinet by means of tubes carrying air into the room from without. "I do not claim for it a perfectly sterilized condition, such as could be attained if the cabinet were stationary; but it must be remembered that this is intended to be carried around from place to place, and it is so constructed that it can be put up or removed within the space of a very few minutes. It is thus available for all manner of operations."

ALCOHOLIC INEBRIETY, AS RELATED TO RESPONSIBILITY, AND CRIMINAL JURISPRUDENCE.

Read in the Section on Medical Jurisprudence at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY T. L. WRIGHT, M.D.,
OF BELLEFONTAINE, OHIO.

Researches relating to the effects of habitual drunkenness on the structure of the heart and blood-vessels; and the known connection which often exists between heart disease and insanity—

¹See Address "On the Heart and Circulation of the Inebriate Classes," by Dr. B. W. Richardson, in Proceedings of the International Congress on Inebriety, p. 32. London, 1887.

especially described by Dr. Wm. Julius Mickle in his recent Goulstonian lectures—open a door for investigating the influence of inebriety upon the mental and moral movements. That the heart is very likely to become dilated in the habitual drunkard, when its pulsations increase in frequency from seventy beats per minute, to at least eighty-five per minute as a stated thing, is apparent. For the latter figures represent an extra and unnatural labor imposed upon the heart of nearly eight millions of beats per year—a change of heart beat from thirty-six millions to forty-four millions, in round numbers per annum. And that the large arteries also must sympathize and suffer with the heart is evident, for they necessarily become enlarged, lax, and bagging, as their tonicity and elasticity are gradually weakened or destroyed by constant and violent stretching. Of course such a state of the circulation, at one time strained and over-wrought, at another powerless and creeping, but with a heart beat always rapid, favors the advent of melancholy moods, leading to despondency and suicidal insanity.

It is obviously impossible, in a brief paper, to go over the whole field of the mental and moral disabilities imposed by alcoholic indulgence. I will therefore omit further reference to the changes and diseases of the circulation as factors in the disturbance, or the destruction of the reasoning faculties, and confine myself to the moral and intellectual incapacities directly traceable to the toxic impression of alcohol upon the nervous system.

The anæsthetic, the benumbing, the paralyzing influence of alcohol upon the nervous system, and especially upon common sensation, always darkens knowledge and misleads the judgment. This follows from the fact that accurate perceptions are wholly dependent upon definite and normal sensations. When the senses are disturbed and impaired, perceptions are correspondingly disturbed and impaired; and they are unable to present to the mind facts as they truly are, as they really exist in the surroundings. The fine shadows, and uncertainties and doubts, which invariably attend all human transactions, escape the notice of a man who is intoxicated; and being unperceived by him, he imagines they do not exist. Every thing has, to his mind, the quality and energy of absolute demonstration. He never hesitates, never doubts. He is therefore a bad, as well as a dangerous witness in a court of justice, and particularly in criminal proceedings, where he is very likely to appear: bad from defective knowledge, and dangerous from a morbid positiveness in conviction and assertion. It seems probable, indeed, that a drunken witness testifying as to events observed while sober, is more trustworthy than a sober witness testifying as to events observed while intoxicated.

The drunken man is always in a state of partial anæsthesia. Everybody dislikes the familiar approach of a person thoroughly intoxicated. The sense of feeling in such an individual is benumbed, and he seizes the person of any one near him in a rude and rough manner. His touch, or rather his grasp is painful because it is violent. The inebriate unconsciously exerts a considerable degree of force in his movements in order that he may be assured, or may feel that he really is in contact with persons or things exterior to him.

This imperfection in the sense of touch is one of the indications of partial paralysis in the nervous system at large. Indeed, the general insensibility of nerve arising from alcoholic influence will become apparent upon a very superficial investigation. The muscular sense is greatly obtunded, as is evinced by the staggering gait, the impeded articulation, the unfixed eye, and the distorted countenance. The senses of sight, of hearing, and even taste and smell, likewise show evidences of disturbed and restricted function in various forms of illusion, hallucination and incapacity. Partial paralysis depresses the ordinary senses without exception when they are brought under the dominion of alcoholic liquors.

Paralysis, in whatever degree it exists, withdraws function in a corresponding degree from the control of volition. No effort of the will can remove, to the slightest extent the incapacities of paralysis. Apparent exceptions simply indicate imperfect paralysis. In this respect the effects of alcohol differ from those of opium and chloral and tobacco. Weakness, debility, prostration respond in some measure to the calls of volition; paralysis does not. Hence, the responsibility of inebriety is modified and peculiar. It differs from the responsibility of common narcotism; and very often, indeed, it is less in degree.

The organic nervous system of the alcoholic inebriate is equally and similarly affected with his nervous organism elsewhere. The drunken man perishes from cold more readily than the sober man. For, not only does alcohol abstract oxygen from the blood corpuscles, and thus "slow" the ordinary physiological combustion of the body—but it benumbs and paralyzes the heat centres,² and sensibly hinders and weakens their functions. Here is the point where alcohol becomes a valuable therapeutical agent in reducing abnormal temperature in disease. "Alcohol lowers, opium raises temperature," says Dr. Norman Kerr in his recent work on inebriety. Alcohol paralyzes universally, opium does not.

The paralyzing property of alcohol is that through which it is enabled to masquerade in the

character of a food; a food indeed, which possesses in its own nature no single suspicion of nutriment; a food "in a certain sense" as it is described; in brief, a "waste-restraining food," whatever that may be. The inquiry arises: What are the achievements of such a food in building up and sustaining the physical organization? The answer appears to be this: When eggs, milk, beef, potatoes, etc., have constructed and nourished the human body, alcohol, by its paralyzing powers and properties, interferes with, and prevents the natural and physiological waste of the organism; and thus it keeps locked up in the system for a period of time longer than is natural, matters which otherwise would have been cast out as effete and poisonous. Audacious assumption will sometimes deceive the very elect; and although alcohol is compelled to take a dark and tortuous way to attain to the unsubstantial semblance of "food," yet the false pretense may, in thoughtless minds, rehabilitate somewhat, a reputation badly tattered.

Still these disabilities imposed upon the several senses, and upon the universal nervous powers through paralysis, do not fully measure the disasters brought upon the human capacities and potentialities by alcohol. These wrongs and injuries are, indeed, merely elementary; but being elementary and alphabetical, they are the keys to the interpretation of whole libraries of moral, and mental, and physical, and constitutional debasement and destruction.

It is impossible for a mind, when the senses are obscured and lifeless, to receive accurate knowledge of persons and things exterior to it. But if it were possible that such knowledge should by some means become the property of mind, still, universal paralysis of the brain (although limited in degree) would prevent the normal use of the reasoning faculties, and knowledge would become the basis of mistaken and perverted conclusions. Again: If, perchance, the reasoning faculties should act with precision and clearness, the coördinating centres of the brain would be incapacitated for analyzing the relative quality of convictions, and the moral activities would be found halting and repressed. Moreover: Even if the moral nature was not thus embarrassed, still, this same brain paralysis would dull those finer distinctions both as to conviction and duty which are essential to the formulation of proper and rational motive and choice—perplexing the will and precipitating an irrelevant and irrational conduct.

When the receptive faculties are in good order, it may be presumed that all other mental powers are probably in like order. I mean as a general rule, for I am not ignorant that moral insanity and imbecility of will are held by many to present independent features. On the other hand, if the receptive mental faculties are impeded, or modified, or insensible, it is presumed that most com-

²Dr. Isaac Ott places these centres: "1st, in front of, and beneath the corpus striatum; 2d, the parts on the median side of the nodus curiosus; 3d, the parts about Schiff's crying centre; 4th, the anterior end of the optic thalamus. These centres are exciting or inhibitory, according to the kind of impression sent into them by the peripheral nerve endings." They are inhibited by the paralysis of alcohol.

monly all the other faculties, both of mind and sensibility, are likewise defective and unreliable. Dr. T. D. Crothers has directed attention to a mental state sometimes found in the inebriate, which he has called alcoholic trance. If a person cannot see clearly, hear correctly, smell, taste and feel accurately, if indeed, he is in a condition of partial paralysis in his entire nervous system, he is very liable to lose his sense of personal identity, so far at least as to be oblivious to what transpires with relation to himself while in that state of impaired sensibility. For it is the unimpeded action of the senses, and the feeling of perfect concord amongst them—one with another—which give to a man the idea of his individual existence, his own, his personal identity. Now it is common for a person to say after recovering from intoxication, "I do not remember anything that occurred." While this may be false, it also may be true, for the reason based upon science, as well as upon experience, namely, the drunken man is in every instance partially paralyzed all through. He is thus very prone to lose his sense of personal identity, that is, his sense of relationship with events and things exterior to him. He must be liable to lose his right sense of relationship with other persons and other things, because, being partially paralyzed throughout his entire nervous organism, he has no just, and regular, and natural sense of anything whatever. In fact the identity of a person which is associated with the impeded nervous power of partial paralysis, is to all intents and purposes, the identity of some other, some imaginary person with whom when restored to its normal condition the mind can have no links or chains of association. Thus considerable modifications in the sensibilities may eventuate in modifications in the sense of relationship which the sound mind should sustain to all things else. Hence, though there may be a modified sense of personal identity incident to modified sensibility of nerve, this is not always recognized in memory when the mental powers resume their natural purity and perfection.

These degradations are inseparable from the use and influence of alcohol. They are totally incompatible with healthfulness of body, clearness of intellect, and strength and delicacy of morality.

The degenerations and disabilities placed upon the human organism by alcohol are of universal application and are practically of the same nature in all cases. Therefore from whatever position they are viewed they present the same appearances and conduct to the same conclusions. Examine, for example, the responsibilities of the inebriate from the standpoint of consciousness. Take the definition of Wundt, that consciousness is psychologically a unification, although itself a unit. According to this author, consciousness is not simply "a knowledge," or "function," or "condition." He tries to tell what it is, not what

it is for, or what it does. There is no nerve-centre of consciousness, and the entire organism is essential to its exposition. "Thus perception, representation, idea, feeling, volition, form the continuity called consciousness—of which only tautological definitions can be formulated. Taken as a whole, consciousness embraces the following movements: first, impression; second, transmission to a nerve-centre; third, general or vague perceptions; fourth, special perception (called also apperception); fifth, voluntary reaction; and sixth, transmission to the motor nerves." But all these elementary constituents of consciousness are benumbed, dulled, hindered, dwarfed in stature, repressed in function, and deranged in natural order of procession by the paralyzing influence of alcohol.

Not only is the rational faculty injured by the influence of alcohol, producing confused, incoherent, and inconsequent ideas and beliefs, but the moral attributes are debased in an equal degree. The paralysis of alcohol, although incomplete, fails not to overcome the finer and more etherial sensibilities, while it leaves the coarser ones comparatively unaffected. That is, it destroys the humanitarian sensibilities, leaving the purely animal ones nearly untouched. And this is, in effect, the suppression of the distinguishing characteristics of the human nature, and leaving in command the brutish and animal instincts, without check or monitor. What follows? The man does not wickedly and maliciously act *like* a brute, but he has become in reality a brute himself, through the loss or suppression of his humanizing sensibilities.

Latency of function is followed by difficulty, if not even impossibility, of function, through atrophy of structure. A curious exemplification of this principle is furnished by Dr. Livingstone, the famous traveler and philanthropist. He said that upon coming into the presence of his countrymen after years of absence among the black tribes of Africa, he was at home in everything except his own mother tongue. "I seemed to know the language perfectly, but the words I wanted would not come at my call."

Nothing is more common than that men, after drunkenness, are amazed at the shocking things they have done, or said, or thought, while in a state of intoxication—indicating the latent state of the moral nature in drunkenness. But if the inebriation is continuous or nearly so, that is, if it is habitual, the shocking thoughts do not become the subjects of rational review; and thus the latency of the moral sense becomes fixed, and congenial to an unsound and deformed reason. The mind may seem to know the nature of morality perfectly, but if morality is wanted, "it will not come at the call." It is therefore not surprising that steady drinking, even when not excessive, is more disastrous in the final outcome.

than the convulsive sprees of the neurotic inebriate. In the latter, the intervening seasons of total abstinence prevent the establishment of habitual disability in the nervous powers; while in the habitual drunkard, nervous disabilities, latencies and inhibitions become perpetual, insurmountable, in a word, *constitutional*.

The chronic inebriate furnishes a ready and sure illustration of the foregoing facts and doctrines. He is debased and defective in every department of his nature. Physically, mentally, morally he is wounded, maimed, crippled, deformed, in equal degrees. Yet his moral deficiencies are the most obtrusive, because they lie most upon the surface. A gentleman of my acquaintance has been a steady drinker of ardent spirits for nearly thirty years. His moral nature is latent, if, indeed, he has any. He is not vicious or malignant, but he is an incessant and shameless, because motiveless, liar. With great coolness he will invent stories totally without foundation and on the most trifling subjects,—all the attendant circumstances and details being of the utmost exactness. And so he cackles on, and will continue so to do till the end of life.

Now this seems very foolish indeed, and likewise very inoffensive. But this man is, in truth, on the verge of insanity. Not only is he morally bankrupt, but his intellect is both sterile and disordered. Amongst the great army of the unrecognized insane there are none more common, or more really dangerous, than the chronic and steady drinkers of ardent spirits. These men in early life acquired the usual habits, both of thought and action, that belong to the average citizen. Automatically, with the guide and hints of the examples of others in their midst, they manage, without much effort, to keep in the ordinary grooves of daily life. If such a man is a farmer, by force of habit he farms as others do; and in a judicial inquiry, should that fact be established, it very likely determines nothing. If he is an artisan, or physician, or lawyer, he may, by automatism and example, pursue his avocation with reasonable success. But let some supreme crisis intervene, so as suddenly to throw him upon his own unaided powers; let instant rage or, what is more consonant with his nerve defect, jealousy, come over his mind and disposition, he will then be thrown out of the grooves of automatic life and, acting upon his own true nature, he will herald to the world his real condition. Then desperation, murder, suicide, true representatives of his actual mental state, will burst unexpectedly upon the scene. To the great body of chronic inebriates this crucial test of insanity is never applied; they live without recognition, and die with their dreadful infirmity unknown and unsuspected.

There is another large field of inquiry related to the jurisprudence of inebriety. It is that one opened by the property of alcohol which promotes

proliferation of the interstitial tissue. This field includes the whole organism, for the connective tissue goes everywhere. Dr. Sieveking asserts that "there is scarcely a degenerative condition of the body that may not result from the habitual use of ardent spirits." Dr. Maudsley speaks of that "more dangerous form of habitual indulgence in small quantities of wine and spirits throughout the day by which some active men of business endeavor to spur their overtaken energies." Alcoholic structural affections of the stomach, liver, kidneys and brain are familiar to all. They are invariably associated with physical changes in the connective tissue of the organism; and they originate from the persistent, the unremitting, the *habitual* influence of alcohol upon the bodily structure.

And this completes the tale of the essential departments of human nature—mind, soul, body. Each and every one is grievously and permanently disabled; and indeed wrecked, in the chronic inebriate.

THE EARLY REMOVAL OF ABDOMINAL CYSTIC TUMORS.

Read in the Section of Obstetrics and Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY C. R. REED, M.D.,
OF MIDDLEPORT, OHIO.

By the term "cystic tumor" in this paper will be included tumors having their origin or growing from the uterus or its appendages, the bulk of the tumor chiefly fluid and contained in a cyst or sack; uni or multilocular, of the ovary, the parovarium, the broad ligament, or the Fallopian tube. It was formerly the teaching and practice of ovariotomists that the removal of cystic tumors of the abdominal cavity should be delayed until they had produced emaciation, or the fat in the abdominal walls had been absorbed; the general health began to suffer; the vital organs become injured to irritation, and the long-continued pressure of the peritoneum had rendered it tolerant of irritation and less disposed to inflammation than when the tumor was removed at an earlier stage.

But the teaching of modern abdominal surgery is to remove the cystic tumor as soon as the diagnosis is clear, while the general health is unimpaired and the tumor is simple in character, has formed no adhesions to surrounding tissues and its contents have not undergone degeneration. While the tumor is yet small and free from complications, its contents thin and flow readily through the canula, but little time will be needed for its removal, and it is now the generally received opinion that the time consumed in the operation is in a direct ratio with its success. The

³ Life Assurance, p. 59 (1878).

⁴ Pathology of Mind, chap. ix, p. 434 (Appleton, 1880).

rian tumors by therapeutics need not be discussed, further than to say that it is limited to the administration of tonics to sustain the functions of the patient, or to correct some errant condition which might diminish the chances of success for the surgical treatment of the case. For the cure of an ovarian cystoma there is nothing known to have the slightest influence, save an operation for its removal, and those patients who unfortunately are led to believe that some drug or other, or some fanciful form of treatment will relieve them from the necessity of an operative ordeal, are only induced to waste time which is valuable and to run risks which may be avoided. Of tapping I have said as much as I think necessary, but here I may repeat what everyone knows now, that it never cures a tumor and that it only brings about complications. It is my firm belief that if ovarian and parovarian tumors were never tapped, but were removed early in their history, we should only have a casual mortality from the operation of ovariectomy. Tapping, therefore, in my practice has become only a palliation for tumors I could not remove.

Many other plans have been devised for the radical cure of ovarian tumors, but they are all now abandoned in favor of ovariectomy; and such methods of treatment as the injections of iodine, or the establishment of fistulous tracks, can only be justified under very exceptional circumstances. Before the re-introduction of the intra-peritoneal method (of treating the pedicle) by Dr. Keith, we used to delay the removal of an ovarian tumor as long as the patient could get about comfortably, and this was justified by the fact that with the clamp we got only about 75 per cent. of recoveries. But now that we can get 95, and when we might get 99 per cent. of recoveries, if there were no delayed or tapped cases, my rule is to remove an ovarian tumor as soon as it is discovered, and this will soon come to be the received practice. The earlier the operation is performed the more certain the patient is to recover, for the less likely are there to be any complications." Tait further says: "However advanced a case may be I never refuse to operate, for I have seen some of the most unpromising cases recover without interruptions."

I have quoted at some length from Sir Spencer Wells, Lawson Tait, and others, as their statements are corroborated by the following cases, with others that might be detailed, coming under our observation.

Case 1.—Mrs. S., aged 36, mother of several children, first noticed an enlargement or tumor of left ovarian region about January 1st, 1875. The tumor was of slow growth the first three or four months, then grew rapidly, when the pressure becoming great and refusing an operation for removal she was tapped June 23d, 1875, about seven months after the tumor was first noticed. The relief was entire for three months when the cyst

rapidly refilled. On October 7th she was again tapped, under protest, with relief for six weeks. The cyst then rapidly refilled, and tapping was again done November 29th, with but partial relief. The fluid removed the first two tapplings was thin and albuminous, now became thick, flocculent and purulent. She was now rapidly failing in nutrition and strength, and suffering severe pain in abdomen. On December 13th, fifteen days after last tapping, the fluid was again removed by trocar with much obstruction in flowing through the canula. It now became evident that each tapping prostrated her more, nausea and vomiting becoming frequent and the end rapidly approaching, and as we refused to tap her again, she and her friends consented to removal of the tumor, and about the 20th of December she was seen by Dr. Dunlap, of Springfield, Ohio. Dr. D. tapped her with a large aspirator, hoping that by again emptying the cyst she would recuperate sufficiently to undergo the operation of removal. She continued much the same, and on January 6th, 1876, the tumor was removed by Dr. D., Mrs. S. dying from shock one hour after the operation.

The tumor was a unilocular cyst without complications or adhesions and easily removed. We believe that had Mrs. S., and friends, consented to an early operation, while health and strength were good, she would have survived the operation, and that she was the victim of delay. The temporary relief usually following a first tapping deceives the patient and friends and leads them to believe that its occasional repetition will indefinitely prolong life. Of this deception she and her friends should be warned.

Case 2.—Miss S., aged 16, commenced menstrual life at 13, one year after which she observed an enlargement of the lower abdomen. This growth we are told slowly increased the first year, the general health suffering but little. The second year rapid development and failing in health and strength, though able to walk about. The tumor now so large as to displace the abdominal organs and greatly increase the circumference of the chest. Menstruation, heretofore irregular, now ceased. Her treatment was wholly medicinal, and no doubt an injury rather than a benefit to her. A consultation now resulted in a diagnosis of ovarian cyst, and its removal recommended and positively declined. She persistently refused an operation for relief, and rapidly became more emaciated and anæmic, nausea and vomiting and loss of appetite now became prominent symptoms. When we saw her first, November 2d, 1887, and diagnosed a large cystoma which was rapidly destroying life, and the end was near. We objected to any further medication and told her her only hope was in the removal of the growth which we did on the 5th of November. She bore the ether badly, vomited frequently during its administration, and also during the operation, which neces-

sarily prolonged it. The abdominal walls were free from fat and very thin, which made the tumor readily accessible, which was found to consist of three large cysts and several smaller ones, the walls of each thick and tough, and contents of each unlike. The large cyst in front and below was filled with thin fluid and readily emptied; the second with colloid contents and slowly flowed through the canula; the third had adhesions to the abdominal wall posteriorly, and contents so thick and dense that they would not flow through the tube and the wall had to be punctured with the scalpel and the semi-solid contents scooped out with the hand. The adhesions were broken up with the hand, the emptied cyst walls were brought through the incision. The tumor was found to grow from the left broad ligament, with a long, broad pedicle, which was tied with the Staffordshire knot.

The difficulty in evacuating the two latter cysts made the operation a long one. There was no hæmorrhage requiring ligature, the condition was one of anæmia. The abdominal organs were forced, by pressure, from their normal positions and did not occupy that place when the tumor was removed. The uterus and ovaries were small and healthy and were not disturbed. At the close of the operation the radial pulse was barely perceptible. The shock was great. After the anæsthesia passed off there were indications that she might rally, but she died two hours after the operation.

There is nothing unique or unusual about the above cases; they are given in detail as we think they teach a lesson. The life of the young girl was a sacrifice to her fear and dread of an operative ordeal. They teach us the utter inefficiency of a cure by medication; that the removal of the cystic tumor is her only hope and safety; that tapping is but temporary relief, a false hope, and complicates removal as a means of cure. The woman who has an abdominal cystic tumor should be told by the physician that its early removal while it is small and free from complications is almost free from danger, and warned of the danger of delay. Then will cystotomy be shorn of its terrors and the per cent. of recoveries in this country nearer approach that of Great Britain and Continental operators. Other cases have been seen by us that have been tapped again and again, and died. Others have passed away without even this temporary relief, and successful cases coming under our observation, operated on early, are not detailed here as they would be void of interest and extend this paper beyond its intended limits.

May, 1888.

RETINITIS HÆMORRHAGICA FOLLOWED BY GLAUCOMA.

BY KENT E. WHEELLOCK, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND CLINICAL IN THE
ST. WAYNE COLLEGE OF MEDICINE

March 19, 1888, Mrs. Esther Smith, æt. 71 years, widow, consulted me on account of an eye trouble. She stated that her vision had been somewhat obscured in her left eye for a few days, and that at the time of her visit she was quite unable to distinguish objects on account of everything being clothed in a deep purple color. Upon examination I found R.E.V. = $\frac{1}{2}$; L.E.V. = $\frac{1}{2}$. L.E.V. = perception of form.

Ophthalmoscopic examination showed a large number of circular red spots in all parts of the fundus, macula especially presenting the appearance as seen in embolism of central artery of retina, except the hæmorrhage was not defined, but shaded off into other hæmorrhages. Tension normal. Patient well preserved, and gave no evidence of heart changes or vascular degenerations which I could detect. Fundus and vitreous hazy in certain strata. I prescribed sol. muriate of pilocarpine one-fourth per cent., teaspoonful to be taken every hour till sweating was induced. This was followed by amelioration of the distressing chromatic changes and by improvement of the vision, so that fingers could be counted in the temporal field. Pot. iodide was then ordered, with ungt. hydrargyri, lanoline as a base, rubbed over brow and temple. No especial change occurred subjectively beyond the gradual fading out of the purple color which before surrounded all objects. Objectively the hæmorrhagic spots faded and brightened with the usual persistency.

Finally, about the middle of May, tension began to increase slightly and a pinkish red blush stole over the sclerotic and circumcorneal area. Eserine was promptly applied, but acted badly. I advised operative procedure, but the patient was timid and could not consent.

On June 20, after an unusually bad night and intense circumorbital pain, the patient consented to an operation. Having grave doubts as to the success of any operative interference save enucleation, which the patient would not consent to except as a last resort, and fearing the possible extrusion of the ciliary body, vitreous, etc., if an iridectomy were done, by reason of sudden relief of the corneal counter-pressure, I elected to do a sclerotomy. As long as there was a fistulous opening in the line of the incision, which was not completed above, a small bridge being left for support, pain was not experienced. When this fistula closed the trouble returned with increased force, and the pain was less bearable by reason of the patient being reduced in nervous force. Seven days after the sclerotomy it was evident that another operation must follow. Seeing no evidence

THE BERLIN SEWAGE FARMS now yield a profit of two per cent. on the capital invested—a very favorable result, considering all things.

of undue pressure from behind following the sclerotomy, I did a large iridectomy downwards. Patient experienced complete relief of pain, and now, nearly three weeks after the operation, the eyeball is soft and has regained its normal appearance.

Ft. Wayne, Ind., July 16, 1888.

ABSTRACT OF PAPER ON THE HISTORY AND TRUE VALUE OF THOSE AIDS TO HEARING USU- ALLY TERMED ARTIFICIAL TYMPANIC MEMBRANES.

*Read before the Section of Otology of the British Medical Association,
August 10, 1888.*

BY LAWRENCE TURNBULL, M.D., PH.G.,
AURAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL,
ETC., PHILADELPHIA, PA.

I have endeavored to give a full history of the use and application of the various agents employed in the place of the natural membrana tympani. By this time we have arrived at some certain definite ideas as to the true value of these aids to hearing:

First, their importance to the health of the ear, by preventing dryness, and the general danger to the hearing from the want of the protecting power of the natural membrane.

Second, we can hear to a certain degree without the membrana tympani; but we cannot have perfect hearing without it.

Third, we have in the various agencies which have been employed not only the means of protecting and preventing the drying effects of the air, but also the prevention of the passage into the middle ear of injurious foreign agents, the prevention of disease from cold air or water, so apt to set up acute inflammation, followed by abscess in the mastoid or brain.

There are certain agents that we have individually found to perform the offices we have described, with the least injury to the ear, and still retain bone contact, make a certain amount of pressure, protect diseased parts and tend to the healing of the perforation. Satisfactory results have been obtained from the cotton ball, or pellets of "Yearsley." The objection to this was the tendency, which the ordinary cotton had to cause irritation, by bearing in its fibres bacteria and micrococci, also other foreign matters. Again, it sometimes fits so closely, owing to discharge or mucus on its surface, as to make a shut sac, and absolutely prevent the vibrations of the membrane, thus acting as a damper. These difficulties are overcome by employing corrosive sublimate solutions with "sublimate cotton," or a disk of sublimate gauze, moistened with fluid cosmoline, so as to make it more adhesive. When water with glycerine is employed the mixture will soon ferment in the ear and become irri-

tating, and causes inflammation. By treatment we can much sooner employ the artificial membrane, even when there is a slight suppurative process going on. The solution of the sublimate should not exceed in strength, one to four thousand, if stronger it gives pain. The patient is supplied with a dozen or two of these cotton pellets, attached to threads which have also been soaked in the solution. The fluid cosmoline or vaseline is to moisten the pellet, when about to be introduced if the parts are dry. The pellets are placed in position by means of the ordinary forceps, called tweezers, such as are found in every lady's work-basket, the thread must be cut off close, so as not to be seen. The second form is the india-rubber disk, cut out with the apparatus of Gruber, and introduced with the forceps, as seen illustrated in the writer's work.¹

We have discarded all the forms of apparatus which have any metallic spring, handle, etc., having found them always irritating and injurious, even our own modification, the stem of which we had carefully covered with rubber. We find the rubber curls up, and is destroyed, leaving the metal exposed.

We apply a disk of what is known in this country, as "Mead's adhesive plaster," which is found to be perfectly pliable and antiseptic, or the same make of "boric-acid-plaster." Its mode of use and report of cases, will be found in the writer's work, p. 491. Even since the issue of the last edition, 1887, we have had reports from almost every case of its success in relieving deafness, assisting the perforation in closing, the plaster being retained for months, and in one case two years, with but little irritation.

Dr. C. M. Thomas, of this City, informs me that he has found the "oil-silk," such as is employed in antiseptic dressing, a very successful artificial membrane, looking and acting like the natural one. He cuts them the size required, leaving a small opening in the center. In some two cases he has found the hearing of the patient much improved even after their removal. Dr. C. S. Turnbull, my son, also of this City, employs with success, a pledget of antiseptic wool placed near to, but external to, the annulus tympanicus.

MEDICAL PROGRESS.

TRANSPLANTATION OF MUCOUS GRAFTS.—At the meeting of the XVII Congress of German Surgeons WÖLFLE, of Gratz, read a paper on this subject. He restores the continuity of the mucous membranes after excision of neoplasms or cicatrices by transplanting strips of mucous membranes to the uncovered places. The grafts were

¹ Clinical Manual of Diseases of the Ear, 2d ed., 1887, p. 429.
J. B. Lippincott & Co., Philadelphia.

to the fact that the patient never had any symptoms either of rheumatism or nephritis. *Secondly*, that the pericarditis was probably idiopathic. *Thirdly*, to the almost entire absence of fever while the case was under observation. *Fourthly*, to the large amount of pus withdrawn at one time, 51 ozs. *Fifthly*, to the fact that over 17 pints of pus were withdrawn from the pericardium in thirty-four days' time. As showing the effort that nature makes to cure these cases, I may cite one mentioned by Wyss, in which there was a pyo-pericarditis followed by the formation of a fistula lasting for years. The patient finally died of an attack of acute pericarditis.

I believe that in cases of pericarditis where there is a distant and muffled heart-sound, with a weak and rapid pulse and dyspnoea, an exploratory puncture with a hypodermatic needle should be performed; that, if pus is present, the pericardium should be thoroughly aspirated; and that if, after two aspirations, the pus reaccumulates, an operation should be performed to establish drainage, and the cavity be washed out, if this be deemed expedient. Of course, in aspirating, the physician must take the risk of converting a serous into a purulent inflammation, as sometimes takes place in cases of pleurisy, even when the best antiseptic precautions are taken.

In cases in which drainage or washing out of the pericardium is employed, I think it would be well to prevent the pressure of the air upon the heart, as in fourteen cases of pneumopericardium, ten died from either sudden heart failure or asphyxia: This might easily be done by the use of a rubber bulb; with a valve opening outward, on the end of the drainage-tube, or by keeping an aspirator attached to the end of the tube and by occasionally turning the ratchet, so as to keep up a slight vacuum.—*N. Y. Med. Journal*, September 1, 1888.

THE PROPER TIME FOR THE ADMINISTRATION OF ACIDS, ALKALIES, ETC.—Alkalies should be given before food. Iodine and iodides should be given on an empty stomach, when they rapidly diffuse into the blood. If given during digestion, the acids and starch alter and weaken their action. Acids, as a rule, should be given between the digestive acts, because the mucous membrane of the stomach is in a favorable condition for the diffusion of the acid into the blood. Acids may be given before food when prescribed to check the excessive formation of the acids of the gastric juice. By giving it before meals, you check the osmosis stomach-ward of the acid-forming materials. Irritating and dangerous drugs should be given directly after food, such as the salts of arsenic, copper, zinc, and iron, except where local conditions require their administration in small doses before food. Oxide and nitrate of silver should be given after the process of digestion has

ended; if given during food, chemical reactions destroy or impair their special attributes, and defeat the object for which they were prescribed. Metallic salts, especially corrosive sublimate, also tannin and pure alcohol, impair the digestive power of the active principle of the gastric juice, so should appear in the stomach during its period of inactivity. Malt extracts, cod-liver oil, phosphates, etc., should be given with or directly after food, so that they enter the blood with the products of digestion.—*British Medical Journal; Dietetic Gazette*, July, 1888.

RECOVERY AFTER RUPTURE OF THE FALLOPIAN TUBE.—DR. DUCHAMP, of Lyons, records in the *Lyon Médicale* the case of a woman who had menstruated on April 30, and was suddenly attacked on June 17 with syncope, vomiting, and a feeling of something having given way in her abdomen. He was called in consultation on the following day, and found her in a condition of collapse. The pulse was almost imperceptible, the abdomen much distended, and extremely tender in the umbilical region. The patient was vomiting greenish matter. She stated that the pains had commenced just above the pubic region, and were accompanied for about half an hour by vesical tenesmus. Vaginal examination disclosed nothing definite. An intra-peritoneal pelvic hæmorrhage was suspected, and on the afternoon of the same day Duchamp performed laparotomy, after previous catheterization and thorough disinfection of the abdomen. A spray was not used. The abdominal cavity contained a quantity of fluid and clotted blood, of which 2.5 liters were evacuated, and a foetus, about 2 cm. long, extracted. Old peritoneal adhesions were found and a perforation of the left tube. The tube and ovarian ligament was tied with carbolized silk, at two places close to the uterus, and the remaining part of the tube and the ovary excised. Three weeks after the operation the patient was discharged cured.

TREATMENT OF LEPRA.—BIDENKAP has seen but one case of leprosy benefited by Unna's ammonium sulpho-ichthyolicum out of many on which it was tried, and according to his observation the following is the best formula for local treatment. It is spread thick, and applied for thirty-six to forty-eight hours, every eight to fourteen days:

| | | |
|---|-----------------------------|---------|
| R | Olei Olivarum | 20 pts. |
| | Resinæ Colophonii | 20 " |
| | Ceræ flavæ | 40 " |

Melt over a water bath for half an hour, with constant stirring. Cool and add the following mixture:

| | | |
|---|-------------------------------------|--------|
| R | Gummi resinæ ammoniaci | 2 pts. |
| | Balsami Terebinth, venetæ | 2 " |
| | Chrysarobini | 12 " |

—*Deutsche Med. Zeit.*, No. 100, 1887.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE

PER ANNUM, IN ADVANCE.....\$1.00
SINGLE COPIES.....10 CENTS

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 15, 1888.

THE PHYSICIAN AS A "NATURALIST."

That the physician should be a man of culture, of broad education, trained in mental discipline, and something more than a person whose business it is to visit sick people will some day be a truism—a truth appreciated by all. "The Physician as a 'Naturalist,'" was the subject of the Presidential Address of Dr. WILLIAM T. GAIRDNER, of Glasgow, at the recent annual meeting of the British Medical Association. The subject is a deep one, and was most admirably treated, as was to be expected from the learned author.

Students of the history of medicine will naturally recall the fact that the educated physician was first a naturalist, a man of science—as science was at that time. Dr. Gairdner's argument was that for a series of indeterminable ages, probably from the time of Hippocrates down to the Dark or Middle Ages, the tradition has constantly existed that the *healer* or physician of the highest class should also be, in a very real sense of the word, a *naturalist*, or perhaps a man of science (physical science being of course understood); that it is his prerogative to be trained and exercised after the best manner and according to the most thorough discipline of the science of his age; and that he should be regarded as being admirable and trustworthy as a healer or physician, chiefly in proportion to the confidence reposed in him as a *naturalist*—an humble, reverent, and exact follower and student of Nature. To

be a student and follower of nature, one must study nature herself; to be an *exact* follower, one must be trained in and have exact and scientific methods of thought and work. Turning again to the history of medicine, we find that the immortals of the profession—and of all the physical sciences—were naturalists in being students and exact followers of nature. Such was Hippocrates—at least to the extent of the light that he had—and whom Galen places in advance of Aristotle, and far above the Peripatetics and the Alexandrian Erasistratus, whose attitude towards Nature was inconsistent. We see Bacon opening his *Accum Organum* by ascribing to man the position of minister or servant and interpreter of nature—the idea being very likely borrowed from Hippocrates.

It is unnecessary to refer to the causes of the medical obscurantism of the Middle Ages. Superstition and "magike naturel" ran riot, and were not without effect on medicine. The physicians of this time were learned, but not scientific. Even at the beginning of the last century, when science began to awaken from its long sleep, the man of learning—of the type of Linacre—greatly overshadowed the man of science—such as Harvey—in the Royal College of Physicians of London; and Oxford and Cambridge, the portals, one may say, of the College, had no standing at all as scientific schools, and confined their teaching to a mediæval curriculum, as do practically many of our schools to-day. And, indeed, at one period of the evolution of medical education in Great Britain, the true physician, the minister, student and follower of Nature, says Dr. Gairdner, stood a very fair chance of being altogether suppressed and wiped out of existence. Before Linacre obtained the charter of the Royal College of Physicians from Henry VIII, in 1518, the practice of physic was chiefly engrossed by illiterate monks and empirics, and the licensing power was held by the bishops in their dioceses. Possibly the officious meddlesomeness of some churchmen with matters medical, and their readiness to endorse so many things that savor of empiricism and quackery, may be the result of a direct spiritual inheritance from the old English bishops.

So far as Great Britain is concerned, the departure from the time-honored medical course without the sciences had its origin in the Scottish Universities, under Cullen, Black and Hope, who

forced chemistry into the medical courses, and thus the way was prepared for the introduction of botany, natural philosophy and zoology. And why not? One must have but limited powers of observation, and still more limited powers of accurate thinking, that does not acknowledge that the proper study of these sciences is conducive to an accurate mode of reasoning and observation. As Graves said: "The charge of inexperience is not necessarily confined to the beginner; it applies equally to many an old practitioner, whose errors have grown and increased in strength during a long series of years, because, from defects in his original education, from the absence of a properly directed clinical instruction, he commenced practice without having previously acquired the habit or power of accurate observation." One wholly untrained in scientific methods of observation is about as likely to reason correctly in regard to a scientific matter, and about as like to stumble accidentally upon a scientific discovery, as he is to fall to the top of a church steeple. In order to see and observe one must know how to look, and look until he sees. Give an untrained person a piece of blende and a piece of quartz; he may see no difference. How is he to find out the difference? Make him look until he sees. The naturalist must first know how to see what he looks at. He must have the power of attention; he must be able to observe correctly; then he will be able to reason accurately. The true physician, as a naturalist, must possess the same powers; otherwise he will see and observe only a part of what he looks at, and reason inaccurately.

What is still wanting to bring about the professional idea of the physician's training, is a question discussed by Dr. Gairdner. He has considerable personal interest in this subject, because he has a son to educate. "The first thing to be learned in order to make all other lessons possible is, in my opinion, this—to deal very largely with things and not with mere words; to realize as much as you can all your instruction by making it your own through personal observation; to suffer nothing, if it can possibly be avoided, to lie in the mind as a dead weight of vocables, oppressing the memory and dwarfing the intellect; but to bring everything into the living light of fact and of Nature, and thereby at once to assure to yourself the truth and exactness

of your knowledge, while at the same time you are stamping it down upon the memory by the most sure and lasting of all technical methods." These words, delivered by Dr. Gairdner in an address more than twenty years ago, are a text for all that can be said on the subject of the best training for the physician, the scientist, the man. No one hope or fear that the physician educated on scientific lines can compete with the scientist, the *physicus*, on his own ground; but we can reasonably ask and hope that "he should be open to the influences, and should work in the spirit, and be subject to the corrections of the more exact sciences, in so far as they are applicable to the human body, whether in its sound or in its pathological condition."

And yet it must be acknowledged that there are very great difficulties in the way of training students of medicine on the lines indicated, the first and chief of which is the want of *early* training in physics and natural science. We see students entering medical colleges with their memories weighted down by chemical and physical laws and formulæ, and *knowing* no chemistry and no physics. To teach them these subjects one must undo years of bad teaching or no teaching, and begin with the youth of 20 what should have been begun with the boy five or eight years ago. Perhaps after we have learned on this side the Atlantic *how* to begin to teach the sciences, we will begin to *teach* them. That day will come, because it must come; and when it does, the day of the now orthodox curriculum will have set. The true physician is a Naturalist, and must be educated as such.

COMPETITION, SUPPLY AND DEMAND, AND MEDICAL EDUCATION.

Just as soon as any one remarks on the surplus of medical colleges and the excessive production of physicians by the colleges in this country, another person assumes an air of superior wisdom and importance and replies: "Competition is the life of trade;" or "Supply and demand regulate the whole matter."

Wholesome competition is the life of trade; unrestricted competition may be the death of it. There may be such a condition of overcrowding of the profession as will tend to the production or increase of quackery, and to lower the

moral tone of physicians. Wholesome competition is the life of *trade*; but competition does not make or increase the business of the physician. We may admit that incompetent physicians make work for those that are competent. Unwholesome competition tends only to make the morally loosely-inclined physician worse; but it does not make the conscientious physician better, or more careful, or more scientific.

Some weeks ago a writer in a medical journal in this country gravely asserted, and perhaps believed, that it was useless to continue to speak of the bad work of some of the medical colleges, and of the large annual output of graduates—that the whole matter was one of supply and demand. The law of supply and demand has nothing to do with the matter, either of the number of colleges or of the output of graduates, nor can it have, for the reason that the public does not purchase its supply of physicians from the manufacturers (the colleges). The production of wheat, and its price, are regulated by supply and demand. The American wheat-grower gathers his in, and may sell it in July or August; he may even contract to sell a certain amount of it before it is reaped; or he may wait for better prices, and hold it until next May, according to the price, *regulated by the surplus*. If the medical colleges could go into the market and offer a certain number of first-grade graduates at a certain price, and as many slightly damaged graduates at a lower price, for cash, as if they were wheat or shoes, with a certainty of profit if there were buyers, and a certainty of loss if they were not sold or had to be carried over for six or nine months, then demand would regulate supply and quality.

But such is not the case. The student entering a medical college does not stop to consider if there is a place to be filled by him two or three years hence. He pays his fees to the college, goes through the course, gets his diploma, and his connection with the college ceases; and in so far as his finding a position is concerned, the college takes no further interest in him. Beyond a kind of sentimental interest in the graduate, the college is regardless of what becomes of him, unless he can occasionally send a student to it.

There are circumstances when demand may vitiate supply. If there be excessive demand and limited supply, the manufacturer is induced by cupidity to put out an inferior article, because it

can be made quicker and at less cost. Again, with small demand and large supply *compete*, the manufacturer has to put out an inferior article so as to underbid competitors. In the case of the medical colleges for which there is no demand (no proper and good reason for existence), they must, in order to exist, underbid the other colleges, either by lower fees, or shorter courses and terms of study, or less rigid requirements for entrance and for graduation, or all of these. Now as concerns students that are attracted by such inducements as these, the profession does not want them in it, and the public are better off by having them out of the profession. They are the men, as a rule, that furnish the failure in the profession, they go into it with the idea that it is a trade, thinking that if it does not suit them they can go into some other business. Entering the profession with these notions, they never get to the point of seeing anything in it except drudgery and dollars; if they make enough dollars to supply the necessities of life, they add nothing to the profession, and lower it in the estimation of at least some of the public. They are an incubus to the profession while they stay in it, and a good riddance when they drop out.

When supply and demand regulate the *schools* and the graduates, we shall confidently expect the free-agency of shoes to regulate their size and price.

"THE PARLOR-GAME CURE."

Every one admits the value of recreation for the healthy and well man, whether that recreation take the form of sport, travel, or simply a change of occupation. Recreation by one that is not sick is in the nature of prevention. In the *Popular Science Monthly*, for August, REV. THOMAS HILL, Ex-President of Harvard, has an interesting article on "the Parlor-Game Cure," or in-door recreation, which may of course be as varied as recreation in the open air, and one is not always able, and does not always care to go out of doors for relaxation and amusement. One may rest his mind and body by reading. If his early training has been in the direction of the more solid subjects and severer studies, he may find as much recreation in reading a work in some department of science as another, with less training, can find in light literature. Obviously, the mind must be refreshed and invigorated on the same principle

as the stomach ; and we may consider the voice and cravings of the mind, no less than those of the stomach, the voice of nature. The kind of recreation must be suited, as Dr. Hill suggests, to the peculiar tastes of the individual and to the character of the fatigue or anxiety that has worn upon him.

Parlor-games, says Dr. Hill, serve as means of cure for those sufferings that arise from mental causes ; they do so by diverting the mind without overtaxing it. Liebig once made a remark that had a great deal of truth in it : When any article is received into the stomach, a contest begins at once between the gastric powers and the intruder. If they conquer, the article was food ; if they are conquered, it was poison ; if it was a drawn battle, the article was medicine. What is intended for recreation may be pursued so far that it ceases to be recreation, and becomes, so to speak, a poison. The sanitary use of anything in the way of recreation, is the use of that thing to the extent of diverting the mind from injurious thoughts, but not to the extent of making the thing itself injurious by reason of becoming too absorbing to the mind. Dr. Hill quotes the late Prof. Pierce as saying that no game, and no toy, ever became permanently popular unless it involved some deep and peculiar mathematical or mechanical principle, and Dr. Hill offers the partial explanation that the presence of this deeper principle, underlying the game, prevents it from being digestible by any except those of strong power. It is questionable, however, if the most expert players of popular games think much of the mathematical or mechanical principles involved. But this makes no difference in the value of games as amusements ; one that would stop to demonstrate the mathematics of a billiard-shot would never become an expert at the game.

Against some of the games that may be used with advantage for their sanitary value there is a great deal of prejudice. Naturally, what is valuable as a medicinal agent is not suitable for an article of diet. Hyper-moralists—we know of no other name for them—tell us that certain games are immoral because played by immoral people for wrong purposes ; that backgammon is conducive to gambling, as well as cards. In the same way it may be said that horseback riding is conducive to gambling on horse-races ; and history tells us that a certain King of England died of

eating too plentifully of lampreys, which were considered a good article of food. The fact is, one must always draw the line at proper use, not going to abuse. But who shall absolutely deny to the invalid the recreation to be obtained from what, if its proper use be not overstepped to abuse, will divert and recreate and relax the mind and body as nothing else will. The invalid may wish to read, or he may not ; he may wish to engage in conversation or he may not ; he may wish to sit and think or he may wish to be so occupied that he will have no time nor opportunity for introspection. He finds invigoration in a horse-back ride on an empty stomach ; or he may prefer, as did the Frenchman, that the horse's stomach be empty. To a Morphy or a Steinitz a game of chess with an ordinary good player would be mental diversion without mental work, but the game of chess is too severely intellectual to afford relaxation to the mind of an ordinary player. The therapeutic value of a game, as Dr. Hill points out, depends upon its adaptation to the individual tastes and need of the person who takes it up ; and must be such as to interest him and keep his attention, but not such as to absorb, excite and fatigue him. His native and acquired tastes, his age and habits of life, the state of his health, the causes of his fatigue, or illness—all these and other similar causes, will influence the effect that any particular game or amusement will have upon him ; and in the exercise of a sound common sense, by himself and his friends, he will select and vary his amusements as carefully as he selects his various occupations, or chooses his diet.

EDITORIAL NOTES.

SPONTANEOUS RUPTURE OF THE VAGINA DURING LABOR.—DÜHRSEN describes, in a recent number of the *Berliner Klinische Wochenschrift*, a case in which the vagina was ruptured during labor by pelvic contractions and an abnormal presentation. The patient, aged 34, had given birth to twins twice, without difficulty, though she had a flat rickety pelvis. Footling presentation was diagnosed before the membranes broke, but the head could be felt to be easily movable, and the feet had evidently prolapsed below them. The vagina would probably have escaped damage had the membranes been ruptured at this time,

the cerebellum. The only symptoms that seem to be common to the larger number of cases are headache, blindness, and convulsions.

PHOTOGRAPHING A NUISANCE.—One of the members of the New York Health Department has secured the conviction of the owner of a smoking factory chimney by photographing the top of the chimney in various stages of smokiness. A detective has recently secured the conviction of a violator of the Sunday Liquor Law by making an instantaneous photograph of the inside of the saloon, with a group composed of the saloon-keeper and several more or less prominent citizens. This is a new field of usefulness for the camera, the testimony of which may be relied upon always. Possibly the portable camera may yet be a part of the outfit of the sanitary inspector.

GLASGOW POLICE AND AMBULANCE WORK.—The Glasgow Police Force is being instructed in ambulance and emergency work on an extensive scale. Dr. Kennedy Dalziel gives lectures and practical instruction to a certain number of men from all divisions four days in each week. Examinations will be held, and the successful men will receive certificates of proficiency, and will be entitled to wear the red St. Andrew's cross on the right arm to indicate that they are competent to treat injured persons.

A MINISTER OF PUBLIC HEALTH.—At the recent annual meeting of the British Medical Association Mr. BRINDLEY JAMES raised an important medical and political question as to the need for a Minister of Public Health. Sanitarians will probably agree that there should be a "Department of Public Health" in every government. Public health is no longer a local matter, but a national, affecting the whole people. Local sanitation would not be affected by a central authority, but could be more efficiently carried on.

LAKE COUNTY, ILLINOIS, MEDICAL SOCIETY.—On September 6 a number of practitioners of Lake County met at Waukegan and organized a County Medical Society. The following were elected officers: President, Dr. L. H. Tombaugh, Milburn; Vice-President, Dr. Wm. M. Sweetland, Highland Park; Secretary, Dr. A. C. Haven, Lake Forest; Treasurer, Dr. J. M. G. Carter, Waukegan.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.—We have reliable information that the last proof sheets of the fifth and last volume of the Transactions have been read and returned to the printer; which justifies the expectation that the whole work will be complete and ready for distribution before the end of the present month.

A CORRESPONDENT in Ohio sends the following interesting information: "The Northwestern Ohio Medical College at Toledo, Ohio, has reduced its fees to twenty-five dollars. The only thing now lacking is a good corps of didactic lecturers for its students who are not required to furnish evidence that they can either read or write."

THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION did *not* meet, as heretofore published, on the 11th, 12th and 13th of September in Birmingham, Alabama; but the meeting has been postponed till the *first Tuesday* in *December* next, in consequence of the present quarantine against yellow fever.

MINISTER VON GOSSLER, it is said, has announced that he will secure the coöperation of the German Government in suppressing all advertisements of secret remedies in Germany.

DR. JOHANN DLAUHY, the veteran hygienist of the Vienna School, died on July 31, in his eighty-second year.

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting Friday, June 8, 1888.

DR. DACOSTA IN THE CHAIR.

DR. C. B. PENROSE reported

TWO CASES OF EXTRA-UTERINE PREGNANCY;
LAPAROTOMY; RECOVERY.

M. C., æt. 32, had had four children, the last seven years ago, and two miscarriages, the last eleven years ago. She was treated for syphilis and uterine retroversion in 1883. She applied for treatment again on February 6, 1888. She had been bleeding profusely from the vagina for thirteen days, had suffered with continuous sharp pain in the left side for the same length of time. The pain and bleeding had started suddenly after

heavy lifting. There were no signs of pregnancy. Vaginal examination revealed a small retroverted uterus, and a tender, cystic mass about the size of a duck's egg lying to the left of the fundus. Three days later the mass was again examined and found to have increased to the size of a large orange. Laparotomy was performed Feb. 10, 1888.

The left tube was found distended at the outer half by a cyst the size of an orange. About three ounces of recent blood-clot was found in Douglas' pouch. The cyst was very friable and easily ruptured. During the removal a considerable quantity of old blood-clot escaped into the peritoneal cavity.

The left ovary was independent of the cyst in the left tube. The right ovary was cystic, and was also removed along with the right tube.

The convalescence of this woman was uneventful. She has menstruated naturally since the operation. Three months after the operation her breasts became enlarged and painful, and she was able to squeeze milk from them. This secretion of milk lasted for two weeks until stopped by belladonna ointment. These mammary symptoms were the only signs of pregnancy exhibited, before or after the operation, and I wish to ask the members of the Society whether it is not an unusual occurrence for this secretion of milk to take place so long after the removal of the product of conception?

Case 2.—E. B., æt. 28, has had four children, the last one a year ago. She had not menstruated since her last labor until two months before she presented herself for treatment. She then began to bleed profusely, and to suffer with great pain in the left side. For the last few weeks the bleeding had been accompanied by the discharge of shreds from the vagina. Vaginal examination revealed a large cystic mass to the right of the uterus.

Laparotomy was performed May 22, 1888. To the right and posterior to the uterus was a blood cyst about the size of an orange. The cyst was firmly adherent to the posterior surface of the uterus, and to the right ovary and tube, and the right tube opened into the cyst. As you will see from the specimen, this cannot be called a tubal pregnancy, as the first case, where a tube is distended by a cyst containing the product of conception. In the second case the tube opens into the cyst. In each case there was disease of the opposite tube and ovary, the ovary being in each instance as large as a good sized egg. The second patient is now out of bed.

Dr. M. O'HARA: Dr. Penrose asks with reference to the presence of milk in the first case. I have seen one case in which milk never appeared. The mother was delivered at full term, and the child died. Dr. O'Hara does not think belladonna has any effect in arresting the secretion of milk.

Dr. WM. GOODELL said that anything producing irritation of the genito-urinary organs may cause the appearance of milk in the breasts. The presence of fibroid tumor may even do so.

Dr. JOSEPH HOFFMAN reported a case of

PERITYPHLITIC ABSCESS ORIGINATING IN APPENDICITIS.

exhibiting the specimens.

The patient, Mrs. B., married, with three children. When first seen she had a pulse of 128 and a correspondingly high temperature, and was unable to stir in bed without extreme pain. Careful questioning elicited the information only that eight days previous she had slipped from a chair, causing severe pain thereby in the right iliac region. This continued up to the time at which I was called in, when she was compelled to take her bed.

The duration of her trouble, according to her own statement, was limited to a little more than a week, though in this connection she mentioned the occurrence, previous to menstruation, of an ill-smelling vaginal discharge. Examination *per vaginam* discovered the presence of a tumor to the right alongside the uterus, the touch of which gave her much pain. The rectum was empty, she having had a dysenteric attack the previous day. External examination was so painful that I did not attempt it. The pain in her back and right leg was intense. I decided that operation was necessary and called in Dr. Joseph Price for consultation, but, examining under ether, was somewhat uncertain as to the condition.

Operation being decided upon, an opening was made in the median line and an exploration made. The cæcal portion of the intestine was found matted down, and was freed after much difficulty. The appendix was almost completely buried in pelvic tissue, and the temptation was great to tie it off piece by piece, though it was afterward enucleated by persistent effort. The cæcal portion of the bowel was almost gangrenous in spots and nearly ulcerated through.

Surrounding this portion was a quantity of stinking pus, about 2 ozs. The pelvis was carefully washed out, no antiseptic being used, and a drainage-tube introduced into the cul-de-sac, and a rubber tube led from the fossa, through the incision, which was closed by seven deep and superficial sutures. Nothing was done with the bowel save to cleanse it. The bowels were at first moved by enemata, and after a large quantity of scybala was discharged, calomel in $\frac{1}{6}$ gr. was given to clean the tongue and relieve bilious vomiting.

The patient made an uninterrupted recovery, all the stitches being removed, as well as the tubes, by about the tenth day. The patient now, at the twenty-fourth day, is sitting up, entirely free from pain.

A curious feature of the case is that after re-

removal of the offending appendix, the patient in three days remarked she had never been so free from pain for two years, then going on to give exact history of her trouble, all of which pointed to perityphlitis. Her pain had become so much a part of her that she did not seem to recognize it as foreign.

The points principally to which attention may be called are the closing of the incision, and the location of the same. Although central, drainage was perfect, and though sutured, it promptly healed, showing, I think, that dogma, both as to location and to allowing the incision to remain open, is not wise, as in this case the central incision enabled us to remove at the same time an ovarian hæmatoma, otherwise out of reach, and as drainage was perfectly obtained. These points for such operation are worthy of special consideration.

As to some points in the diagnosis, I shall not refer, leaving them to Dr. Price, who so kindly worked with me, I would only venture the opinion that here, as in all other pelvic surgical diseases, absolute diagnosis is very often impossible, depending, as it does, so much on an emesis which, as in this case, is little to be relied upon.

DR. CHAS. B. PENROSE: I would ask whether or not the pus was encysted around the cæcum, or free in the peritoneal cavity.

DR. HOFFMAN said the pus became evident only on raising the cæcum.

DR. PENROSE said the cases in which it is proper to make the incision over the cæcum are those in which there is an encysted abscess around the cæcum or the appendix. If there is free pus in the peritoneal cavity, a median incision would probably be better.

DR. GOODELL said that he on several occasions had been obliged to sever the appendix from its attachment, in operations for ovarian tumors, and the operation has seemed to have no effect. It seems to be a useless appendage. He did not know that modern research had thrown any light upon its use. In removing the appendix, he simply ligated it with silk and cut it off, carefully squeezing the end so that no fecal matter should remain.

DR. JOS. PRICE: A few years ago ovariologists regarded the appendix as sacred, as something that should never be touched. The case reported is one of great interest. The woman had complained for two years, her trouble evidently beginning in an appendicitis. The cæcum was so much thickened and so low down in the pelvis, as to suggest tubal disease. She however had good history and several healthy children, the youngest two years of age. The presence of the tortuous body on the right side determined the choice of the median incision. On opening the abdomen, the small hæmatoma was first removed. Afterwards the cæcum was dealt with. The course of the

case was all that could be desired. Dr. T. G. Morton teaches lateral incision and non-closure. As to the first, circumstances should influence the choice. As to the second, he did not believe in it at all. We are too far advanced in surgery for such procedure.

DR. J. V. KELLEY said that the general practitioner sees more cases of perityphlitis than the specialist, and he was disappointed in not hearing more about the history of the present case. He was also surprised that this case occurred in a woman, the disease being much more common in men. The existence of pain for a year or two would be against the existence of perityphlitic abscess. Over that time perityphlitic abscess is an acute disorder and runs an acute course.

DR. J. PRICE does not believe the view that perityphlitis is necessarily acute. He knew of a case of Dr. T. G. Morton, in which the operation for the trouble was repeated at the end of a year, and the appendix removed. Here the trouble was recurrent, gradually growing worse, and necessitating the second operation.

DR. M. O'HARA cited in substantiation of Dr. Price's views, the case of his own child, in which inside of eleven months there were two or three attacks. For four or five months he was in perfect health, although the condition (appendicitis) existed. Another attack followed, and death from septic peritonitis resulted.

DR. M. PRICE believed that the peritoneum can accommodate large quantities of pus for a time, just as abscess in other parts of the body can be tolerated.

DR. WILLIAM GOODELL thought that perityphlitis, like any other form of inflammation, may exist for years. He thought Dr. Kelley had narrowed the question down too far.

DR. HOFFMAN held it a mistake to believe inflammation cannot be present in these cases without the presence of a well-defined tumor. It is easy to make a diagnosis after operation, as is too often done. Pages could have been written after this operation on the diagnosis of perityphlitis, but *before* operation it was impossible, because there was no history. There was nothing but the inflammation of the appendix to cause the symptoms of which she complained.

DR. J. V. KELLEY thought no one would diagnose perityphlitic abscess without the presence of a tumor. The pericæcal tumors undergo resolution spontaneously, and abscesses do not form.

DR. J. B. DEEVER drew a distinction between appendicitis and perityphlitis, and believed very few cases of inflammation about the appendix undergo resolution.

DR. G. M. SHOEMAKER cited a case which he thought proved a termination by resolution in one such case.

DR. WILLIAM GOODELL presented a specimen of

OVIDUCTS AND OVARIES DISEASED BY GONORRHOEAL INFECTION.

The ovaries were enlarged by cystic and interstitial degeneration. The meso-salpinx was wholly absorbed, the fimbriated extremities of the oviducts were enlarged into a bunch of cysts, and the adhesions to the broad ligament were firm.

History as to the infection was a clear one. The husband had the gleet, and directly after marriage the wife's health began to fail from pain and reflex neuroses of a high grade. By vaginal examination, the concurrent implication of oviducts and ovaries was very manifest, as both organs were readily differentiated. The patient did well.

DR. GOODELL also exhibited a

SOLID OVARIAN TUMOR OF SUSPECTED MALIGNANCY.

The girl from whom he removed it was only 16 years old. It had grown very rapidly since it was first discovered a year and a half ago. It weighed 6 pounds, and for its removal needed an incision of nearly twelve inches. The pedicle was a very broad one. Some ascitic fluid was present. This patient was also doing well.

DR. GOODELL also exhibited a

FIBROID UTERUS WEIGHING 18 POUNDS.

A rapid accumulation of a large amount of ascitic fluid rendered the operation imperative. The patient had, on account of pressure upon the diaphragm, to be anesthetized in the sitting posture, and it was only after removal of the fluid that she could be safely placed in the recumbent posture. The incision needed for the removal of the tumor was a very long one. The pedicle was treated extra-peritoneally, by Kœber's wire clamp. Thus far all the symptoms are favorable, but as only forty-eight hours had elapsed since the operation, the patient was not yet out of danger.

DR. PRICE was glad to hear Dr. Goodell say operation is the only treatment for such cases. He never operates simply for relief of nervous symptoms, but wants actual disease.

DR. C. B. PENROSE exhibited specimens removed from a patient who had been treated several months, in 1884, for

CHRONIC CELLULITIS,

by the usual applications. She was married, and had two children, the last five years ago. In 1886 she returned for treatment. Diagnosis, cyst of left ovary and tube. She was again treated by the common applications. In 1888, one week ago, she returned for treatment, and pyosalpinx was diagnosed. The tubes and ovaries were found down in the hollow of the sacrum. The left ovary contained one drachm of purulent material.

DR. PARVIN regards the extract of hæmatoxy-lon the best astringent for chronic diarrhoea in children.

FOREIGN CORRESPONDENCE.

THE SALZKAMMERGUT AS A HEALTH RESORT.

St. Wolfgang—Ischl—Gmunden—St. Gilgen—Altersee—Unterach—Salzburg—Linz.

It is known to most medical men that the *Nachkur*, or After-Cure, is quite as important in the thorough treatment of such cases as find Carlsbad beneficial, as is the immediate drinking of the water. So as the time draws near which makes a change desirable for the patient, the question becomes an all-engrossing one, "Where shall I go to have quiet, good air, good food, congenial environment, and the services of a skilled physician?" These inquiries naturally associate themselves with considerations of cost of transit, and of ways and means generally. A patient whose system is experiencing the effects of the Carlsbad Cure has neither the physical strength nor the desire for long journeying. It is imperative also that the spot selected for convalescence should be as excellent as possible in all of the natural embellishments that round out an ideal summer home, and that it should not lack in the human devices that are necessary to the building up of physical strength.

For the purpose of aiding physicians in an intelligent differentiating, as well as to aid them in giving practical hints to such as are coming to Carlsbad, I propose to take up the discussion of some of the leading quarters that are desirable for invalids, embracing in this, a consideration of locality, of railway transit, cost, hotels, etc. This seems desirable, because during two seasons in which I have been in Carlsbad, out of the very many Americans whose acquaintance I had made, the question of the *nach-kur* seemed always to be a perplexing and a troublesome one. Beginning with the Salzkammergut, I shall cover the following resorts: Linz, Gmunden, Lambach, Ischl, Altersee, St. Wolfgang See, St. Gilgen and Salzburg.

From Carlsbad to Salzburg there is a direct train, leaving at about 8:30 o'clock in the morning, and making the trip in about fourteen hours without change of cars. Ischl is a drive—and a beautiful one—of between two and three hours from here. Altersee, St. Wolfgang, and St. Gilgen are short and lovely excursions, by carriage, from Ischl. The price of a ticket (second class) to Salzburg is 20 florins 62 kreuzers.

My family and I, who had determined on St. Wolfgang, and were desirous of making the journey as easily as possible, went first to Budweis. Leaving Carlsbad in the 8:30 morning train, arriving at 3:30 P.M. Tickets, second class, 11 fl. 82 kr. Here we stayed over night at the Silberne Glöcke Hotel. We took the accommodation train the next morning at 6:30 (this being the only

train that one can make use of unless he wait for the fast express, which does not leave till the afternoon), and arrived at Linz at 11:30 A.M. The tickets from Budweis to Linz cost only 2 fl. each. At noon of the same day we took the Vienna express from Linz and arrived at Ischl, after a rarely beautiful ride, of mountain, valley, and lake, at three in the afternoon, the tickets costing between 3 and 4 fl. We then took a carriage—which for three adults and two children cost 7 fl.—and drove in a little over two hours to St. Wolfgang. This made an easy and enjoyable ride. If one prefer, the journey can also be made *via* Munich, Rosenheim and Salzburg. From Carlsbad to Munich is a ride of twelve hours (Hotel Four Seasons), and from Munich to Salzburg *via* Rosenheim it is seven and one-half hours. One can go to Munich, then to Innsbruck and Salzburg. The road from Innsbruck is one of the most charming in Europe.

St. Wolfgang, on St. Wolfgang See.—This place is perhaps the loveliest in the Salzkammergut. It is a very old market town of 700 inhabitants. The lake is 549 m. above sea level, and is 12 km. long by 2 km. wide, and is 114 m. deep. It is hemmed in on all sides by mountains ranging from 1780 m. to 2000 m. in height. The water of the lake during the summer months has an average temperature of 17° R., and is pleasant for swimmers. The air is bracing without being cold, and the days are mild without being enervating. Take it for all in all, it is the most restful, healthful and altogether beautiful place that I have seen during a long sojourn abroad. There are two excellent hotels *Peterbräu* and *Weissen Ross*. The former is higher up, with a magnificent view; the other is directly at the water edge. At the *Peterbräu* rooms with a lake view, during the season, which begins in July, range in price from 2 fl. 25 kr.—that is, for a room with two beds. Rooms with balcony are more expensive. Rooms without the lake view are much cheaper. Board is 3½ fl. for each person, daily. It is perhaps cheaper to board *à la carte*, because one portion often is large enough for two, and at the end of each week ten per cent. is deducted from the entire amount of the week's bill. The situation of the *Peterbräu* is almost ideal. It would be difficult to conceive a more perfect picture of water, meadow and mountain. The walks are various, so that the Oertel treatment can be thoroughly observed. The food is simple, but well cooked and ample, while the milk is fresh and rich. For an After-Cure, nothing better could be chosen.

Ischl.—This fashionable and world-renowned summer resort is situated on the river Ischl where it empties into the Traun See. It is so surrounded by mountains that it seems to be quite shut off from the entire world. It is extremely rich in Alpine scenery, but lacking in the variety that

makes St. Wolfgang so attractive. It abounds in Hotels and Pensions, all of which are comparatively expensive. Hotel Elizabeth, Hotel Bauer, both elevated, near the Calvarier mountain; Hotel Post, Hotel Erzherzog Franz, Hotel Victoria and Hotel Austria, on the Esplanade; all of these first class. Bayrischer Hof, Stern and Krone, good houses, but of the second class. The Esplanade is rich with stores as attractive as those of Baden-Baden or of Carlsbad. There is a theatre, a Kurhaus, and a circulating library (mänhardt). Of baths there are Sool, Pine, Sulphur, Russian and Salt, also a swimming bath. There are 100 Milk and Grape-Cures. The kur tax for permanent guests is 8 fl.; for people of the middle classes, 6 fl., for women alone, 2 fl., children and servants, 1 fl. The music tax is 3 fl. The "Soolquellen" have been celebrated since 1828, and are very tonic and stimulating. Especially good for those who have taken a course of moor baths, and for those lacking in tone. On the Esplanade is a picture of Hygiea, bearing the inscription, "Man nennt als grösstes Glück auf Erden gesund zu sein—ich sage nein! ein gröss'eres ist, gesund zu werden." The arrangement of the baths is perfect. Ischl has yearly between 6000 and 7000 guests, and upwards of 10,000 tourists. It is a place of much finery, tickling the fancies of those who revel in purple and fine linen. It is in every sense of the word fashionable, but I question much its entire fitness as a Carlsbad Nach-Kur. It is probably more widely known than any other place in the Salzkammergut.

Gmunden.—A lovely place. Grown of late to be as expensive and perhaps even more fashionable than Ischl, from which it is only a few moments removed, it also boasts of many hotels, of which I mention the Hotel Austria, on the lake; Hotel Bellevue, with an unbroken view and baths; Goldenes Schiff, on the steamboat landing; Hotel Lauthuber—all of these first-class. Second class: Goldenes Brunnen, Goldene Sonne, Hirsch. Kur-tax 4 fl. Music tax 2 fl. The esplanade runs for a mile along the border of the lake, affording magnificent views of the majestic mountains, impressive in their eternal silence, and of the Traun See. This lake is 12 klm. long, 4 klm. wide and from 28 to 191 kilm. deep, and is as romantically placed, in the lap of the gigantic peaks, green almost to their very tops, in shades that vary with the fickle rays of the sun, as any of the numerous bodies of water in this region. As at Baden-Baden, the patient can be quiet, entirely alone, with Nature only as a companion, or he can mingle with the throng in the ball-room, or satisfy his æsthetic though expensive desires among the shops that are made radiant to catch the gulden of the guests.

St. Gilgen is a quiet, restful, old-fashioned hamlet, on St. Wolfgang See, easily reached by boat from St. Wolfgang. It is cheap, unfashionable,

and charmingly situated. For those who demand *absolute* quiet, without any distraction whatever, it occurs to me that St. Gilgen would offer many inducements.

Altersee.—The Alter or Kammer See is the largest of the Austrian lakes, being 20 km. long and 2 to 3 km. wide. The little steamers run from Kammer to Unterach twice daily.

Unterach is a much sought after summer refuge, and is beautifully situated on one end of the lake. The hotels are the Post, Mittendörfer and Hofwirth, at any of which very reasonable arrangements can be made for a prolonged stay. The terms at the Hotel Altersee in Altersee are 2 florins a day for board, and for a *good* room with two beds between 2 and 3 florins. The country round about is somewhat less wild and more flat than at Wolfgang, but the walks are charming, and many people select Altersee in preference for a continued stay. Those who have been there for many summers continuously are loud in its praise.

Salzburg.—"Die Gegenden von Salzburg, Neapel, und Konstantinopel halte ich," says Humboldt, "für die schönsten der Erde." Poets have sung its praises, travellers have written its beauties in letters of gold, and history has clothed it with an interest peculiarly its own. The natural splendor of its environs is that of Zermatt, but tempered with the refinement of a larger civilization and with its concomitant comforts. The air seems to be as invigorating as that of Saas in Grund, but not as rough and sharp. It is a Kur-ort—a Health Cure—of the very first rank. In natural beauty it has no rival. Its baths of all kinds, including the Moor, are of the highest order, and it combines everything that is necessary for mental rest, physical repair, æsthetic gratification and artistic ambition. It would be prolix to attempt a minute description, because Salzburg is known to most every one; it would be foolish to attempt word-painting, because even a Theophile Gautier would find himself handicapped in the attempt. It simply more than bears out all that has been written and said about it. The Hotel de l'Europe and Neblock are both as good as anything we have at home. Two people can have a comfortable room and board at either for from \$80 to \$90 a month, and I have no doubt that for a long stay much cheaper terms could be made. But there are rooms to be had everywhere for from 8 to 15 florins per week, and at the Mirabellgarten Kurhaus, or Zipfer Bierhalle, meals at all prices are always ready. Breakfast and supper (bread, eggs, tea, coffee, chocolate, etc.), can be had at Tomaselli, Koller, Oberkogler, Felber, or at many other coffee-houses. In this way two people could live for 5 or 6 florins a day. For patients making a Nach-Kur, or continuing here these baths, this *al fresco* life has great advantages—for fresh air and plenty of it is always prescribed. Libraries, museums and shops are in

abundance. The place is rich in reminiscences of Mozart, and the restlessness, the vagaries and the superstitions of the Middle Ages have left their finger-marks everywhere. I have never yet heard of a person who left Salzburg disappointed, or feeling that the actual had not more than equalled the prefigured.

Linz.—This town is best known as a bathing station for travellers from the north and east toward Ischl. It has direct connection with Vienna by boat (eight to nine hours) or by railway—by the latter also with Munich, Budweis, St. Valentin and Ischl. Its hotels are Erzherzog Carl, Goldenes Adler, Kanone and Goldene Löwe. It is prettily situated, but has no especial merit as a Kur-ort. This may also be said of Lambach.

Finally, I commend the Salz Kammergut to physicians who are sending their patients to European summer resorts, as being a complete realization of all that is most desirable. To add a suggestion would seem to spoil the general harmony. Nature has done its perfect work in an incomparable way, and man has added to it the comforts which modern civilization demands.

HORATIO R. BIGELOW, M.D.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Liparin—Improvement of Watering-Places—Florence Nightingale—Epidemic Jaundice—The Lebel Rifle—Sir William Boorman—The Morgue in Paris—The Children's Jubilee Offering to go to the Hospital for Sick Children—Glass-blowers' Cramp.

The new product known as liparin is said to be a good substitute for cod-liver oil. It is proposed to make liparin cheaply by the direct addition of pure oleic or erucic acid to olive oil. It is thought that cholesterin which is contained in cod-liver oil, is of importance, and that if vegetable oils be used in place of cod-liver oil they should be made to contain cholesterin. Others look upon cholesterin as a most undesirable substance to be present in cod-liver oil, or in any other substance used as a food or medicament, since it is the principal cause of gall-stones. Professor Mering, who introduces liparin to medical notice, says there can be no doubt that in the first half of the present century cod-liver oil was regarded as more efficacious than it is now supposed to be, and he attributes this to the fact that the article first used was the dark oil, which contained much more free acid; the steam-drawn oil now used being prepared as nearly as possible neutral. With regard to cholesterin, the same Professor thinks that it is a great mistake to credit this substance with any properties as a food. He remarks that the yolk of a hen's egg contains about as

much cholesterin as can be obtained from three ounces of the best cod-liver oil, namely about four English grains, and maintains his opinion that lipanin is an excellent substitute for cod-liver oil.

Last year the Speaker of the House of Commons made a few graphic remarks on the mineral waters of Great Britain and Ireland, which were duly reported at a meeting of physicians at Leamington. On that occasion it was pointed out that if it was desired to promote the prosperity of our English spas, there must be certain developments which many of them did not at the present possess. The invalid did not merely want water and baths. There must also be the means of recreation, for the invalid who when well amused was half cured. English medical men were reproached for neglecting the spas of their own country, but it must be remembered that they had to take a great variety of subjects into consideration. The bromo-iodine spa at Woodhall, in Lincolnshire, has only at present a local reputation, though Mr. Burney Yeo claims for it that as a health resort it will no doubt have a European or even a world-wide fame, and such is the case of others. And should any of them be recommended to a lady by her physician, he will as likely as not be at once asked whether Homburg or Weisbaden would not do as well. A young man in the Guards objected to Harrowgate because he was afraid of meeting his tradesmen there, and in a like manner a married man refused to go to Bath because his mother-in-law had already been recommended to go there. Numerous mineral springs in England are known to chemists and are shown by analysis to be similar to those of Vichy and other Continental resorts, but hitherto it has not been deemed advisable to risk any capital in the view of making them fashionable health resorts, simply because the attraction of Continental travel and thorough change of scene and of climate are too great, and draw annually from Great Britain enormous sums of money.

Miss Florence Nightingale, the heroine of the Crimean war, is now a confirmed invalid. The long hours of standing during her hospital work affected her spine, and she has been for some years past an in-patient at St. Thomas' Hospital. She is now in her sixty-ninth year.

From Glasgow the medical officer of health reports a group of cases of what has been described as "epidemic jaundice." They were eleven in number and occurred in five families. Nearly all the patients were children, and there were two deaths. A woman, aged 36, was the first to have it. She died after two months illness. Her child, aged 14 months, was taken ill the day before its mother's death and is still jaundiced. In one family six of the children have been ill. All the cases have occurred in the same small district. The investigation of the present affected area is not yet complete, but the drainage is for the most part "sur-

face drainage," and the house drains and connections are very defective. The precise causation of outbreaks is not clear but in numerous cases it is thought by Dr. Russell to be distinctly associated with sanitary defects and nuisances, such as stagnant sewage, choked drains, and the like.

The new French instrument of destruction, the "Lebel rifle," is a wonderful weapon. Members of the Academy of Medicine wishing to diagnose the physical consequences of wounds inflicted by the bullets of the gun recently had experiments made on twenty corpses. The bodies were placed at the ordinary firing distances, from 200 yards up to a mile or so. The bullets whizzed through the bones and pierced them without fracturing them, as is done by the bullets of the "Gras rifle." The wounds, if they may be called so, which were inflicted were small in their punctures, and consequently very dangerous and difficult to heal. Injuries inflicted at short distances were so considerable that in the opinions of the surgeons they would be almost incurable.

A provisional committee has been formed to present Sir William Bowman with some public acknowledgement for his great services to ophthalmology and to physiological science. The testimonial is to take the form of a portrait of himself painted by an eminent artist. No limit is placed on the amount of individual subscriptions, but it is hoped that the sum collected will be sufficient to enable a good reproduction of the portrait to be distributed to subscribers of at least two guineas.

The books of the Paris morgue show a steady yearly increase of the number of dead bodies received. Four hundred corpses were brought in 1830. In 1870 the number had risen from 400 to 800. The numbers rose from 807, in 1880, to 920, in 1881, and from 879, in 1882, to the unprecedented figure of 944, in 1883—the result of wilful murder, accidental death, or suicide.

The Children's Jubilee Offering to the Queen, which has exceeded £6,000, has been presented with a diamond brooch to Her Majesty, on behalf of the children, by Princess Victoria, of Teck. The money will be appropriated towards the completion of the wing to the Hospital for Sick Children, Great Ormond street.

Attention has just been drawn to the fact that glass-blower's cramp is a professional deformity of the hand. It consists in pronounced flexion of the fingers, occurring chiefly at the second joint. In France it is called *main en crochel*, or *main sermée*. It attacks the majority of workmen and is most pronounced in the oldest. No remedy is proposed by Dr. Poncet, who has been giving great attention latterly to the subject.

G. O. M.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Diphtheria—Cocaine Solution Sprays in Bronchial Affections—Hot Water in Obstetrics—Electrolysis in the Treatment of Erectile Tumors—Advantages of Borax and Boric Acid—Pathology of Diabetes.

At a recent meeting of the Société Médicale des Hôpitaux, Dr. Gaucher made an important communication on the treatment of diphtheria. He stated that the false membranes being the source of infection, should be removed, their site being painted with a concentrated solution of carbolic acid and camphor, in alcohol, to which is added some olive or almond oil. The following is the formula of the solution he employs: Crystallized carbolic acid 10 grams, camphor 20 to 30 grams, alcohol 10 grams, the whole to be dissolved, and to this is added an equal quantity of oil. The strength may be varied according to the severity of the malady. The essential point of the treatment consists in the topical application of a caustic solution which is at the same time antiseptic, after the removal of the membranes. The latter is effected by vigorous rubbing with some cotton wool wound round a slender piece of wood, which has to be repeated morning and evening. Some of the members present observed that it was too difficult and painful an operation for the author to entertain any hope of its being adopted in practice.

Dr. Perron, of Bordeaux, made a communication to the same Society on the advantages of sprays of solutions of cocaine in various bronchial affections. Under the influence of a 2 per cent. solution of cocaine which is used in the form of a spray, the most violent fits of coughing are arrested in a few minutes. Phthisical subjects who are troubled with coughing and consequent insomnia at night, experience immediate and durable relief from this treatment. By this means opiates which are always more or less injurious after a time, are avoided. In acute bronchitis the action of cocaine is as advantageous. A notable modification takes place in the state of the pulmonary mucous membrane, and owing to the insensibility thus produced, the inflammation and the secretion are diminished. About ten or twelve inhalations, practiced by means of the spray producer placed near the mouth wide open, suffice to bring about prompt and satisfactory results.

In his thesis for the doctorate, Dr. H. Lorain, of Nancy, treated of hot water in obstetrics. The author explained that hot water at a temperature of 45° to 50° C. is an energetic stimulant of the smooth muscular fibre. It also has an action on the blood-vessels, manifested by an immediate and persistent contraction of the vessel, or by a momentary dilatation followed by contraction.

These two physiological facts explain the therapeutic effects so evident which these hot injections of 45° to 50° C. exercise on the uterine contraction. It is by their stimulating action on the uterine fibre that these injections constitute an oxytocic means so efficacious and so useful during labor. It is the double action exercised by the hot water on the fibre and the vessels which explains its efficacy as an agent of hæmostasis. Hot injections should be preferred as hæmostatic to cold injections, as cold water has an action less energetic on smooth fibre and, moreover, the vascular contraction due to cold might be followed by a reaction with paralytic dilatation, whence it may happen that the hæmorrhage, arrested momentarily, reappears with more intensity.

Dr. Redard lately read a paper at the Société de Chirurgie on the treatment of erectile tumors by means of electrolysis. The author accords to this treatment a superiority over the other means generally employed. He entered very fully into the mode of operation, and employs electrolysis only once in six or eight days. After the first application the tumor hardens; after the second, the morbid production presents important modifications. The apparatus he employs consists of a battery of continued currents, a galvanometer of intensity well graduated, needles in gold or in platinum, of half a millimetre in diameter and from eight to ten centimetres long. The operation may be performed by three ways of introducing the needles into the tumor: 1. By penetrating the morbid product with the positive and negative needle, at a short distance one from the other. 2. To introduce the positive needle alone into the tumor, the other pole of the battery fixed in the form of a plate on any part of the body. 3. To introduce the negative needle alone into the tumor. The current employed should be from 15 to 18 milliampères. In order to avoid all hæmorrhage, before withdrawing the needle or needles, the current should be reversed for a few seconds and brought to zero. The needle or needles should be removed only when no resistance is experienced. The author concludes his paper by the following propositions: 1. Electrolysis is the method of choice in the treatment of erectile and cirroid tumors. It succeeds wherever the other methods fail. 2. It affords protection against all accident of sloughing and of suppuration. 3. It acts with certainty and precision. The puncture with the positive needle alone should be recommended in the majority of cases.

In a paper to the Medical Society of Anvers Dr. Bedoin writes on the advantages of borax and boric acid. He states: 1. The borate of soda or borax, and particularly boric acid, possess incontestable antiseptic properties, the activity of which is not so small as is generally affirmed. Both are recommended for the preservation of alimentary substances, such as milk, butter, cheese,

eggs, butcher's meat. But owing to its almost absolute insipidity, boric acid should, for this purpose, be preferred to borax, the savor of which is disagreeable; both are absolutely innocuous. 2. Interiorly, the therapeutic employment of boric acid as an antiseptic has already given very encouraging results, which are of a nature to authorize its administration in the affections where, till now, carbolic acid was almost exclusively employed, for example, typhoid fever. 3. Exteriorly, the serious antiseptic properties of borax and particularly of boric acid, justify the generalization of their employment in surgery, notably in the practice of dressings after the method of Lister, also in certain affections of the urinary organs, of the eyes, ears, and of the skin.

At the Société de Biologie, Dr. Quinquaud read a note for Drs. Artaud and Butte on the pathogeny of diabetes, in which the authors notice the organic alterations consecutive to neuritis of the vagus nerve. These alterations involve the greater part of the viscera: intestines, pancreas, stomach, liver, kidneys, etc. They are of the same nature which are observed in diabetes, and are accompanied by functional troubles which characterize this malady.

A. B.

DOMESTIC CORRESPONDENCE.

Physicians and Insurance Companies.

Dear Sir.—In view of the self-evident fact that all true life indemnity rests upon the accuracy and reliability of medical opinion and services, it would seem equally apparent that the profession is entitled to square dealing, at least from the great companies. Many of the latter in order to advance their interests have, of late, adopted a line of policy which violates the tenets of honorable dealing, and is unjust towards those whose assistance has proven in the past so valuable.

Solicitors for these companies are authorized to ignore the claims of established medical examiners, and boldly offer their patronage to any medical man who will bid for it by taking out a policy. It is natural, that those having acted as examiners—regularly appointed—should often be carrying all, and frequently more insurance upon their lives, than they feel able. Should this be true, it avails nothing that his services have stood between the company and heavy losses or the many good words dropped for the former during his relation as examiner, provided some other man can be induced to insure. To drop a man and transfer the patronage of the company to another for such a reason is worse than unjust—it is ungrateful.

Truly yours, X.

BOOK REVIEWS.

Early English Text Society. *THE ANATOMIE OF THE BODIE OF MAN.* By THOMAS VICARY, Searjeant of the Surgeons to Henry VIII, Queen Mary, and Queen Elizabeth; Master of the Barber-Surgeons' Company; and Chief Surgeon to St. Bartholomew's Hospital, London, 1548-62. The Edition of 1548, as reissued by the Surgeons of St. Bartholomew's in 1577. With a life of Vicary, Notes on Surgeons in England, Bartholomew's Hospital, and London, in Tudor Times, an appendix of documents, and Illustrations. Edited by Fredk. J. Furnivall, M.A., Hon. Dr. Phil., and Percy Furnivall, a student of St. Bartholomew's. Part I. London: N. Trubner & Co. 1888. 15 shillings.

This volume contains a portrait of Dr. Vicary, after Holbein, early plans of St. Bartholomew's Hospital (about 1560), Norden's map of London, 1593, map of Vicary's road from London to Maidstone and Boxley, and other illustrations. The "profitable Treatise of the Anatomie of Man's body, compyled by that excellent Chirurgion, M. Thomas Vicary, Esquire," occupies 86 pages. The appendix may possibly be considered the most interesting part, and covers 250 pages. It contains the grants to Vicary by Kings and Queens; extracts from City records as to Barts, Vicary, the Plague, London vagabonds, etc.; Vicary's will; Henry VIII's statutes relating to Surgeons; Supplement to the statutes; the Surgeons' compromise with the City as to serving on Quests; ten recipes by Henry VIII and his physicians. Poem, "What veins to bleed in," etc.; the 185 Freemen of the Barber-Surgeons' Company in 1537; the numbers of the other City Companies; ordinances of the Barber-Surgeons of London, 1529; ordinances of the Barber-Surgeons of York, 1592, and other matters.

As a contribution to the history of medicine this volume is of rare interest.

Early English Text Society. *A DIALOGUE AGAINST THE FEVER PESTILENCE.* By WILLIAM BULLEIN. From the Edition of 1578, collated with the earlier Editions of 1564 and 1573. Edited by MARK W. BULLEN and A. H. BULLEN. Part I.—The Text. London: N. Trubner & Co. 1888. 10 shillings.

This work was written just after the great Plague of 1563, and is edited by two namesakes of Dr. Bullein. This dialogue seemed to have dropped out of notice after 1596; in this year Nashe mentions it in his "Address to all Christian Readers," in which he writes: "Memorandum, I frame my whole Booke in the nature of a Dialogue, much like Bullen and his Doctor Tocrub." This "Tocrub" was anagrammatic for

Dr. Burcot, an expert in metals and minerals, and whose name appears in the State papers of the time. The editors are preparing some notes on the *Dialogue*, which, with a biographical and critical memoir of Dr. William Bullein, and copious extracts from his remaining works, will form a separate part. Lovers of the old and curious in medicine will find much in this *Dialogue* to interest them.

SECOND ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF OHIO, for the Year ending October 31, 1887. Pages 374. Columbus: 1888.

Among other reports this volume contains reports of health of towns, on water-supply and disposal of sewage, and on various diseases, and on the adulteration of food, drugs, and drinks. It contains also a number of papers on sanitary subjects, as "Effect of Occupation on the Health of Individuals," by Dr. John D. Jones, "Especially Sources of Danger to Life and Health," by Dr. Thomas C. Hoover, and "The Hygiene and Care of Children by their Teacher," by Katherine Kurt, M.D.

MISCELLANEOUS.

EXTRAORDINARY VITALITY IN A CHILD.—Dr. W. A. Thompson, of Amphyll, England, gives in the *British Medical Journal*, an account of most wonderful vitality in a young child:

On Tuesday, July 17, two children aged respectively 4½ and 5 years, left their homes shortly after their dinner at 1 o'clock. They were seen during the afternoon playing together by the side of a pond, with shoes and socks off their feet, by a passing laborer, who shouted to them to leave the water, and it appears that the boys ran away frightened in different directions. The eldest boy arrived home some hours later on, and stated that he had lost his companion and knew nothing as to what had become of him. Search was made about the roads and paths where the children had been seen, but to no purpose. It was now getting dark, and, the police being in lanterns and some with St. Bernard and retriever dogs. Rain fell nearly all that night, but the search was continued, night and day, for several days. It rained heavily frequently during this period.

All hope of finding the child was now abandoned. However, on the Sunday morning following (July 22) some young men and boys were having another look round the fields, when, at about 10 A.M., one of them thought he heard some groaning in a field of wheat near him, and, on going there, found the little boy sitting on the ground, not very far from the pathway. He was sitting upon his coat, with his little trousers drawn down so hungry!

How long he had been in that spot and in that condition of attire we cannot make out, and he is too young to give much explanation. When found he appeared to be in a semi-conscious state, and did not seem to know those around him; but after some hours he recognized his mother and brothers. With suitable treatment the child has completely recovered, without any subsequent illness which might be induced by starvation or exposure to wet and cold for the long period of five days and

nights, counting from the dinner-hour on Tuesday until 10 A.M. on the Sunday following.

During this time, as far as any one knows, the child had nothing to eat except the heads of growing wheat (which was in very poor condition at that time). He told me that he had eaten some, and we may presume he sucked water off the wheat and grass about him. Curiously enough the child had out with him a small tin box without any lid, and he states he tried to catch rain-water in it, but could not get any; the wheat being very high probably prevented him doing so, and also most likely kept him fairly dry. In appearance the child did not seem much the worse for his prolonged fast, and seemed as plump as any ordinary child; but the mother states that he was an unusually strong and fat boy.

Taking all things into consideration—the child's age, no proper food or drink for over 117 hours, the exposure to the cold and wet weather prevailing at the time, the misery and the loneliness it must have endured for so long a period—it seems somewhat remarkable that life was preserved.

GREAT GAIN.—Dr. John C. McVail says: "If the question be asked, Where is the proof that our preventive measures—our sanitation, vaccination, and isolation—have had the results we speak of, the answer is at hand. It is given by the Registrar-General in the language of figures. He points out that, according to the newest English life-table, the children born in England in any one year have now divided among them 'nearly two million years of life'—more than would have been the case thirty-five years ago. In England and Wales the annual mortality per million of population per annum has been as follows:

| 1861-65 | 1876-79 | 1871-75 | 1876-80 | 1881-85 |
|---------|---------|---------|---------|---------|
| 22,595 | 22,436 | 21,975 | 20,817 | 19,310 |

Comparing the first period and the last, the difference is 3285 per million, and taking the population at 39,000,000, the total annual saving is about 100,000 lives. And if for every death there are twenty cases of sickness, then we have two million less cases of sickness in the first period. . . . You can count the cost of each case of sickness, of lost work, of doctors' bills, and so on, and also the monetary value of each of the 100,000 lives saved. And you can put all this as an income against the interest on the money spent in sanitary improvements, in water works, sewage works, vaccination grants, officials' salaries, etc., and even on this lowest ground—on this merely commercial basis—we find that cleanliness is next to godliness, resembles godliness itself in being 'great gain.'—*Sanitary Journal*, July 4, 1888.

DEMAND AND SUPPLY IN SNAKES.—Last year in Madras 1,492 persons were killed by snakes, while 255 snakes were killed, and no rewards were paid. In Bombay 1,206 persons died from snake-bite, while 266,921 snakes were destroyed, and Rs. 6,517 were paid as rewards for their destruction. The mystery is not explained by a further examination of the facts. In Bombay in 1885, 1,145 persons died from snake-bite, while the number in 1886 was 1,206, showing an increase of sixty-one victims, although 283,579 snakes had been killed in 1885. In Madras 1,487 persons died of snake-bite in 1885, and in 1886 the number was 1,492, showing an increase of only five deaths, while in 1885, 328 snakes were killed, and no rewards were paid. Again; in Bengal the number of deaths from snake-bite in 1885 was 10,112, whereas in 1886 it had been risen to 10,388, although 53,995 snakes had been killed in 1885, and only 31,204 in 1886. In the Punjab, where snake-killing has been energetically taken up, the victims numbered 696 in 1885 and 928 in 1886. Yet 47,576 snakes were killed in 1885, at a cost of Rs. 4,732, and 87,715 were destroyed in 1886, at a cost of Rs. 10,506.—*The Indian Medical Gazette*, May, 1888.

HEALTH IN MICHIGAN FOR AUGUST, 1888.—For the month of August, 1888, compared with the preceding

month, the reports indicate that dysentery, diarrhoea, cholera infantum, cholera morbus, remittent fever, typho-malarial fever and erysipelas, increased, and that measles decreased in prevalence. Compared with the preceding month the temperature in the month of August, 1888, was lower, the absolute humidity and the day and night ozone were less, and the relative humidity was the same.

Compared with the average for the month of August in the nine years, 1879-1887, intermittent fever, cholera morbus, whooping-cough, remittent fever, diphtheria, tonsillitis, cholera infantum, typho-malarial fever, influenza and diarrhoea, was less prevalent in August, 1888. There was no disease reported more usually prevalent in August, 1888.

For the month of August, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was lower, the absolute humidity was slightly less, the relative humidity was the same, and the day and night ozone were much less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of August, 1888, at 27 places, scarlet fever at 25 places, typhoid fever at 28 places, measles at 7 places.

Reports from all sources show diphtheria reported at 6 places more, scarlet fever at 8 places more, typhoid fever at 13 places more, and measles at 15 places less, in the month of August, 1888, than in the preceding month.

PHARMACEUTICAL MAPS.—We have decided to print Europe in several sectional maps, and without regard to any special order save that of having the material at hand to best serve our purpose. The coming sectional maps of Europe will be on a much larger scale than those heretofore given, and will therefore have even greater value in pharmaceutical, botanical and commercial interest than anything yet produced. We have been favored with the aid of some of the most eminent of scientists in Europe in the arrangement of the habitat of the plants, and congratulate our readers and friends on this pleasant feature of pharmaceutical fraternity which we shall duly acknowledge by giving suitable notice of their kindness when publishing the portions to which each have so generously contributed of their personal knowledge toward insuring a reliable pharmaceutical map of Europe.

Recently we have had a set of the three maps heretofore given (South America, Africa and Asia) reproduced on a scale suitable for college instruction. The first two maps are $7\frac{1}{2}$ feet square, the map of Asia $7\frac{1}{2}$ feet by 11 feet. Such maps cannot fail to be of great value to students at colleges of pharmacy and medicine, being specially adapted for lectures on *Materia Medica*.—*Pharmaceutical Record*, Sept. 1, 1888.

DISEASES OF WINE-TASTERS.—A German medical paper says: The diseases of wine-tasters were studied by Donnet, of Bordeaux, and Dr. C. Marandon, of Dijon. Wine-tasters are frequently suffering with disturbances similar to alcoholism, although the claret-tasters do not swallow the wine, but on the contrary, reject it, and even rinse their mouths afterward. In one case of Dr. Donnet's a man 32 years old used to taste every day thirty or forty samples of wine, occasionally liquors and rum, without ever swallowing any part of them. After two years he became very excitable, lost his appetite, did not sleep well, and suffered with disturbances of sensibility, pains in the breast, a feeling of weakness, difficulty in breathing. He improved after abandoning his profession, although a nervous debility still remained, as noticeable by the facility with which he was set in tears. Another statement made by Dr. Donnet is the great number of apoplexies in Bordeaux, where many persons drink one and a half litres of wine with each meal. This number exceeds the number of apoplexies in any city of the world. Dr. Marandon did not notice any symptoms of intoxication in Burgundy tasters, although some of them

would swallow the samples. He remarks that tea-tasters always swallow some tea, and this fact, he says, explains the nervous symptoms they are affected with.—*Mining and Scientific Press*.—*Sanitarian*, August, 1888.

RESIDENTIAL BUILDINGS FOR MEDICAL STUDENTS.—The medical staff of Guy's Hospital, with the consent and full assistance of the governors, have decided to build a residential college for the students. This will be erected on premises within the hospital precincts, on ground on which the first Nonconformist place of worship in London was situated. It is intended for the reception of sixty men, amongst which number will be included the resident staff of the hospital, the house surgeons, house physicians and others, who will be in telephonic communication with the hospital buildings. Every convenience will be provided and amongst other things a gymnasium will be included, for the use of the residents; this is as it should be. The building is calculated to cost £20,000, the whole of which has been already subscribed.—*Lancet*, July 28, 1888.

RE-IMPLANTATION OF BONE.—After his Address on the Surgery of the Brain at the recent meeting of the British Medical Association, Dr. Macewen gave a demonstration of cases so remarkable that it alone would suffice to render the Glasgow meeting memorable in the annals of surgery. Many of the patients whose cases have been described in the address were present, but the many eminent surgeons who attended were greatly interested also in the examples of reimplantation of bone; the head cases afforded many instances, but the most remarkable was a boy, in whom the whole shaft of the humerus had been reformed from grafts, forming a useful link. The audience was large, and Dr. Macewen was loudly applauded and received numerous congratulations on his brilliant results.—*British Medical Journal*, Aug. 11, 1888.

BICARBONATE OF SODIUM AS A MILK PRESERVATIVE?—The conseil d'hygiene of the Department of the Seine have taken a decided stand against the use of bicarbonate of sodium for the preservation of milk. The chief arguments in favor of the position taken are: the short time that it now requires for the milk to reach Paris and be distributed; the easy application of cold, which preserves it fully as well without changing its composition; the unpleasantness of the sodium bicarbonate, which, when decomposed by lactic acid, yields a purgative salt very injurious to the health of children.—*Zeitschr. f. Nahrungs-u. Hygiene*, March, 1888.—*Sanitarian*, August, 1888.

BUENOS AYRES is to have a water supply, the cost of the works for which will be fifty million dollars.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 1, 1888, to September 7, 1888.

A Board of medical officers to consist of Major Charles H. Allen, Surgeon; Major George M. Sternberg, Surgeon; Major Henry McElderry, Surgeon; Capt. Edw. C. Carter, Asst. Surgeon, is constituted to meet in New York City on October 1, 1888, or as soon thereafter as practicable, for the examination of Asst. Surgeons for promotion and of candidates for admission to the Medical Corps of the Army. S. O. 203, A. G. O., September 1, 1888.

Capt. J. C. Worthington, Asst. Surgeon, ordered from Ft. Crawford, Col., to Ft. Townsend, W. T.
 Capt. J. D. Hall, Asst. Surgeon, ordered from Ft. Townsend, W. T., to Ft. Niagara, N. Y.
 Capt. P. R. Brown, Asst. Surgeon, ordered from Ft. Niagara, N. Y., to Ft. Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 22, 1888.

No. 12.

ADDRESS IN STATE MEDICINE.

RECENT ADVANCES IN STATE MEDICINE.

The Annual Address by the Chairman of the Section on State Medicine, Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888

BY HENRY B. BAKER, M.D.,

SECRETARY, STATE BOARD OF HEALTH, LANSING, MICHIGAN.

The By-laws of this Association require that "The Chairman of each Section shall prepare an address on the recent advancement in the Branches belonging to his Section." Thus the subject of this address is fixed; yet, most of us are too busily occupied with professional or official duties to study carefully all of such work reported in all parts of the world, especially as the field in State Medicine is so very extensive, depending upon, and utilizing, as it does, the progress in most of the medical and allied sciences. One must have a very broad view, much leisure, a good knowledge of several languages, and be familiar with the requirements of practical sanitary work, in order to summarize fully the "recent advancement in the Branches belonging to" this Section. I cannot hope to accomplish so much, and, if I could, you could not listen to it in forty minutes, but I shall do the best I can in the time at my disposal to place before the Section a summary of those recent advances in State Medicine which have attracted my attention and have impressed me as useful for our encouragement, for the suggestion of errors or obstructions to be avoided, or of new methods or combinations of facts useful for our progress.

GENERAL PRINCIPLES UNDERLYING USEFULNESS OF STATE MEDICINE.

Sanitarians are not so much nuisance abaters as formerly were the hygienists; and they are more disease-preventers. In the public-health service generally, methods are coming to be more instructive, and less dogmatic and mandatory. Such opposition as that of Herbert Spencer, to boards of health constituted according to the old ideal, does not at all apply to State Boards of Health constituted on the modern plan which

makes their chief functions the collection, collation and dissemination of facts which teach the causation of disease, the best means for avoiding and preventing sickness and deaths, and which facts are from sources so extensive as to be entirely beyond the reach of individuals, but which the people as a whole, through their governmental representatives, can easily collect, collate, and place before all classes of people, to be utilized by such as are sufficiently intelligent.

Modern methods of sanitation are thus in harmony with the law of "the survival of the fittest," if we consider, as I do, that the most intelligent classes, who obey the teachings of sanitary science are best fitted to survive.

Any narrow selfishness, however, which might be engendered in one of this most intelligent class, by dwelling upon the idea that "I am holier than thou," is soon dispelled when he comes to see that no man lives entirely to himself alone; not only is each person to some extent his brother's keeper, but he is dependent on all about him for immunity from dangerous communicable disease, and for safety of life and health in various ways.

The highest selfish interests thus join with the highest benevolence in favor of the widest possible diffusion of sanitary knowledge, and of the most complete obedience to sanitary precepts, ordinances and laws.

INCREASE OF THE PUBLIC-HEALTH SERVICE, AND OF SANITARY PUBLICATIONS.

An important factor in sanitary progress is the increase in the number of persons who enter, more or less permanently, upon some branch of sanitary work. In many of our States such increase is very great. For instance, in Michigan when the State Board of Health was organized, in 1873, there was hardly an active local board of health in the State; very few local health officers were appointed; while for the year 1887-88 over thirteen hundred local health officers were appointed in the State, and many of them physicians who devote considerable time to the work.

The increase in the numbers of our people who live in the cities and villages, the improvements in plumbing and other sanitary appliances, the increasing tendency toward sanitary inspections

of such appliances, with the increased number of health officers and sanitary officials, and the greatly increased public interest in sanitary affairs, has built up a class of sanitary and trade journals, which do much for sanitary progress. Many physicians are now or have been health officers. For this, and other reasons, the medical journals seem to contain an increasing proportion of literature bearing upon sanitary administration, and other branches of State Medicine.

But the most important factor tending to increase the demand for sanitary literature is the work of the boards of health themselves, and especially that part of their work which consists in spreading among the people, in popular pamphlet form, the existing knowledge applicable to the restriction and prevention of the most dangerous diseases, including the relations of low ground-water and of contaminated water to typhoid fever, and similar information of immediate practical utility. This work is productive of immediate good in the reduction of the sickness and mortality from such dangerous diseases; and it stimulates a general desire among the people for more knowledge on such vital subjects.

The apparent popular demand for sanitary literature is being met by several of the State Boards of Health, by the publication of a monthly journal which serves as the organ of the State Board which issues it, and as a convenient means of regular communication between the office of the Board and the health officers and others throughout the State who are interested in public-health work. Such a journal is now published in Minnesota, Maine, Pennsylvania, Tennessee, Ohio, Iowa, and perhaps other States. In some of the States the proceedings of the State Board are published quarterly, and distributed quite generally within the State.

ORGANIZATION.

The increased number of persons in the public-health service, with the growing general interest in their work, prompts organization for comparison of methods of work, for coöperation wherever practicable, and for the general promotion of sanitary affairs.

In some of the States this tendency has led to the formation of Sanitary Associations, consisting mostly of physicians and others of the leading thinking classes. The Ohio State Sanitary Association is a notable example; but Associations have been formed in other States. The principle involved is not quite the same as in the "Associations of Medical Officers of Health," in England and in the Province of Ontario; but inclines more toward the popularization of sanitary information and measures among the people generally than toward the advancement of the knowledge of the medical officers of health. The as-

sumption (which is probably correct) seems to be that the medical officers of health are now in advance of the people, and do not, so much as the people generally, need to advance their knowledge of sanitary science or of sanitary administration. However, under the system of free and general distribution of the best that is known, by State Boards of Health, it would seem that the time is near, when, throughout this country Associations of medical officers of health need to be formed, for their own advancement, and for the best interests of sanitary progress.

In Michigan, and some other States, although local Sanitary Associations have been formed, sanitary conventions have, thus far, been the principal method of popularizing sanitary measures. The topics chosen have reference to the the greatest apparent needs of the locality in which the convention is held, such, for instance, as the present methods of disposing of excreta and waste products, and the present source and condition of the water-supply of the city or village, including the exact relations of privy-vaults to wells in the principal business part, and the principal residence portion of the place, and the explanation of the best means for restricting the most dangerous communicable diseases.

These practical questions of vital importance can be so presented by members of State Boards of Health, by leading physicians, lawyers and ministers, and so impressed upon the people of almost any community that thereafter much greater attention will be given to affairs which relate to the public health.

THE NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

The increasing intelligence of the people is now tending to stimulate progress by those who aim to lead the people in State Medicine. The most notable organization of this nature within recent years is the Conference of State Boards of Health, a National Association of delegates from State Boards, but having international tendencies, as shown by the fact that it includes delegates from the Provinces of Canada. It has had its fifth annual meeting in Cincinnati, just preceding this meeting of the American Medical Association. It does not supplant the older American Public Health Association, which aims at the popularization of sanitation, and for the advancement of sanitary science, but its work differs from both these functions of the older Association, being largely concerned with the practical questions of official public-health work, and its membership is restricted to officers who represent those who can put in force the conclusions reached by the conference. It is a league which, to some extent, serves to unify the Public-health Service of the United States, and might be utilized in the same direction to a much greater

extent by the United States Government, to supply the lamentable loss of our National Board of Health, or to coöperate with a National Bureau of Health, or with a National Board of Health, should the present Board, or a new one be granted an appropriation.

LEGISLATION: LOCAL, STATE, NATIONAL.

Sanitary laws are commonly supposed to have two functions: if properly published and enforced, they are educational; and they may be enforced in cases where no other course will secure obedience to sanitary precepts. But sanitary laws have other functions. A new general principle of sanitation, before suggested, is important especially in connection with sanitary legislation. According to this general principle of action it would seem that for the interests of sanitary progress, the most important legislation is that which provides for the collection of facts, not only those upon which to base immediate action, but also those out of which to construct sanitary science, that which provides also for the comparison and study of those facts by persons especially qualified for that service, and for the publication of the results of such statistical and other researches for the benefit of all classes of people. The facts necessary for immediate action are as imperatively needed as is the knowledge of the location of a burning building, and for much the same reason—in order that the danger may at once be averted. And, as in the case of a dangerous communicable disease, life and health as well as property are at risk, any ordinary pecuniary interest of the individual should yield to the high moral duty to the public safety, and await recompense from the public. Therefore I agree with Dr. Rohé, our chairman last year, who said: "The first requirement then in dealing with infectious diseases from a 'State Medicine point of view' is *notification*, and inasmuch as such notification will never be effected if voluntary, it must be made compulsory."

"The second requirement in restricting the prevalence of such diseases is the segregation of patients, and guarding healthy individuals except the immediate attendants, from contact with them."

"The third requirement is prompt and thorough disinfection, in other words, the absolute destruction of the infective properties of infectious matter, in whatever that may consist."

"I would therefore declare the watchwords, of the practical and progressive sanitarian in dealing with communicable diseases, to be these three: *Notification, Isolation, Disinfection.*"

There seems to be progress in the first essential (notification) in many parts of the country. In England the area of country coming under that law is increasing, and it is proposed by the local government board to extend the system of com-

pulsory notification, and perhaps to make the law general, although in that country there has been opposition by some of the medical profession. In Michigan notification of dangerous diseases is compulsory upon householders and physicians, and physicians are allowed a very small fee (ten cents) for each case reported. Only small-pox, diphtheria, and scarlet fever are specifically mentioned in the law, but several other diseases including typhoid fever, and röteln, have been declared to be "diseases dangerous to the public health." Increasing attention to this subject is noticeable in Michigan, in Wisconsin, in Minnesota, in Maine, in Iowa, in Indiana, in Kentucky. In New Hampshire, also, a law has been enacted requiring physicians to report all cases of diphtheria and scarlet fever to the local board of health.*

STATE LEGISLATION: PROTECTING THE PURITY OF INLAND WATERS.

The last general court of Massachusetts made an appropriation of \$30,000 for the use of the State Board of Health in protecting the "purity of inland waters." "It was thought wise to begin with the largest and most important supplies." . . . "From time to time other water supplies have been examined in this exhaustive manner." . . . "Four rivers in the State have been systematically examined." The results of these examinations are given in the report of that State Board, made January, 1888. The Board has established an experiment station, to determine the amount of sewage that can, in that climate, be purified by application to different soils.

LEGISLATION: NATIONAL.

That the United States Government pays less attention to those highest earthly interests of its citizens—human health, and life itself—than other governments, and even less attention than it gives to the protection of the swine and other domestic animals, is a cause for regret and shame to all intelligent citizens, and especially to physicians, because their attention is so frequently called to the subject, and because they realize how much might be done for the prevention of epidemics, and, more especially, of the sickness and deaths from the most common causes.

As usual, there is now before Congress a bill for a National Health Service.

WHAT PREVENTS NATIONAL LEGISLATION IN THE INTERESTS OF PUBLIC HEALTH.

A brief review of some of the efforts of physicians and Associations may aid to a clearer understanding of the situation.

Fifteen years ago in this same City of Cincinnati

*Circular issued Dec. 5, 1887. Published in "City of York, Report on the Compulsory Notification of Infectious Diseases, York, Eng."
 †Sanitary News, Jan. 29, 1888.
 ‡Sanitary News, Feb. 4, 1888.
 §Sanitary News, Feb. 11, 1888.

nati, May 1, 1873, I listened to a report to the American Public Health Association made by C. C. Cox, M.D., LL.D., of Washington, on "The Necessity for a National Sanitary Bureau." The report, and the "Bill to establish a Bureau of Sanitary Science" which had already been presented to the U. S. Senate, are published in Vol. 1, pp. 522-532 of the Transactions of that Association.⁶

Dr. Cox said: "Regarding the continually increasing sanitary wants of our country . . . it occurred to me that our government should advance among the first to conserve the health of its population, and avert the disasters which menace it. With this view I prepared, in 1871, the plan of a National Bureau of Health. This was subsequently submitted, as you are aware, at a meeting of the sanitarians, representing the different sections of the country, assembled at New York, and endorsed by them in a series of commendatory resolutions."

After the reading of the report by Dr. Cox, the American Public Health Association adopted a resolution "that in the judgment of this Association, the establishment of a National Sanitary Bureau, with relations to the general government similar to those of the Bureaus of Agriculture and Education, is highly desirable as a means of promoting sanitary science and the protection of the public health."⁶

November 14, 1873, at the meeting of the American Public Health Association in New York, resolutions presented by myself were adopted,⁷ favoring the project, and for the appointment of a committee representing, so far as practicable, each State in the Union, to memorialize Congress, and to coöperate with a similar committee or "section" of the American Medical Association. Through the belief of the President of the Health Association and others that the time was not favorable, the effort was not vigorous, and it was unsuccessful at that time.

November, 1878, at a meeting of the American Public Health Association in Richmond, Va., I again presented resolutions outlining proposed duties of a permanent U. S. Health Commission, proposing a committee of the Association to memorialize Congress for the establishment of the Commission, and for the appointment of a standing committee on Public Health in each legislative branch of the U. S. Government. The yellow fever epidemic of that year emphasized the need for some action by our government. The Association committee was appointed, nearly every State being represented upon it. Dr. Billings, of Washington, was especially active. Hon. J. H. McGowan, a member of Congress from Michigan, was induced to confer with Dr. Billings, introduce a bill, and labor for its passage. The Na-

tional Board of Health was thus established. For a few years it did excellent work, which was commended by the leading sanitary associations in this country. It had the respect and confidence of nearly every sanitary authority in this country; but, from the first, it had the determined opposition of a few who were in office and power in Washington, and who were eventually able to cripple and finally to defeat appropriations for it by Congress. The distinguished sanitarians who were its first members dropped out, and to-day the Board exists only in name.

In a recent number of the *New York Medical Journal*⁸ is an editorial entitled "The Marine Hospital Service and the Proposed National Bureau of Health," in which is an account of the arguments recently before a committee of Congress for and against the proposed legislation. The arguments for it were mainly by the President of the National Conference of State Boards of Health, and by three ex-presidents of the American Public Health Association, a committee representing the principal sanitarians and sanitary organizations of this country. The only opponent mentioned was Dr. Hamilton, of the Marine Hospital Service, who "submitted a brief." The editorial says: "Under one form or another, the old National Board of Health has been sought to be revived on several occasions, and each time Dr. Hamilton has had to oppose the attempt almost single-handed."

Officers in the medical departments of the army and navy, on the other hand, have favored the National Board of Health or other public health legislation; but it is much easier to prevent than to obtain appropriations.

FOR WHAT PURPOSE ARE WE HERE?

In order to fulfil the duties assigned to me, I have studied again the apparent intention of the founders of this Section, and of those who have contributed to its maintenance. It would seem that there has been and is in the medical profession a profound desire to promote the general welfare by utilizing for the public good those vast stores of scientific and practical information gained by the medical profession, which, although not of much use in the *treatment* of disease, are capable of a much more important service in the *prevention* of disease. I think there is a growing belief that there is a higher plane than even the exalted one on which the medical practitioner has long stood, and that if quite a large proportion of the medical profession were employed and paid for their efforts for the prevention of disease, their relations to the people would be of the noblest kind. The methods which tend in this direction are those which seem to have actuated the founders of this Section—those which favor the formation of State and other Boards of Health, and (as the

⁶ Pub. Health: Trans. of Am. Pub. Health Ass'n, vol. II, p. 537.
⁷ Page 543, vol. II, Pub. Health: Trans. Am. Pub. Health Ass'n.

⁸ March 24, 1888.

name of the Section, "State Medicine," implies) build up the legal organizations, local, State, and National, through which only can the public reap the results of the progress in sanitary science.

But those of us who have watched the progress of this Section know that although the Section has almost uniformly held back from recommending specific legislation, sometimes even discouraged attempts at public health legislation, it has always favored that other essential to progress in this direction, the building up of a sound sanitary science for the use of the State, whenever the State shall become sufficiently intelligent to utilize it.

Nearly all the papers and discussions before this Section are expected to contribute to this scientific branch of our work; therefore, if numerous important lines of work in the sanitary sciences, during the past year, are not mentioned in this address, they are likely to be brought out during this meeting, especially those relating to the topics especially chosen, "Malaria and the Causation of Fevers." There has been considerable progress in the knowledge of the causation of fevers, but a satisfactory mention of the lines of work would take too much of the time allotted to this address.

DEVELOPMENT OF THE GERM THEORY OF DISEASE.

Progress seems to be in waves, and greatest along certain lines. Recently many have been engaged in investigation and experiment in developing the germ theory of disease. Great progress has been made, considering that it has been largely the contributions of individuals; for as a rule those for whom this work is most valuable—the common people themselves—have not yet awakened to the importance of such work so as to demand of their representatives that it shall be maintained by the governments. The Imperial Government of Germany has wisely maintained the laboratory in which Dr. Koch's great contributions to science have been taught to large numbers from many countries. In this country the General Government has done little worthy of special notice, but individual officers, in several branches of the U. S. Service, have contributed much toward progress in this direction, notably Dr. Sternberg, of the Army Medical Department.

A writer in *Science*⁹ has lately published results of an inquiry by circular, addressed to each of the medical schools in this country, asking questions concerning the germ theory, and what is being done about it. Replies were received from those colleges in which the greatest number of students is taught. He concludes that quite a number of bacteriological laboratories have been established in connection with our larger medical schools.

They are under the charge of competent directors, and are places where original research is being carried on, and where students have an opportunity to familiarize themselves with the subject in a practical manner. American medical schools are thus doing their share in this research in this manner, and the endeavor to advance our knowledge of bacteria and their relation to disease.¹⁰

In Baltimore there is a well-equipped bacteriological laboratory under the direction of the Professor of Pathology of the Johns Hopkins University. In Brooklyn, the Hoagland Laboratory—the gift of Dr. C. N. Hoagland—under the immediate supervision of that gentleman, who provided the funds for the building and its equipment, "will supply all the facilities, both for students and for advanced investigators, which can be found in the best-equipped laboratories of Europe."

In Missouri the Legislature has appropriated \$5,000 for "the creation of laboratories for bacteriological study and investigation, and for the culture of vaccine virus, in connection with the State University at Columbia."¹¹

A STATE LABORATORY OF HYGIENE.

In Michigan, the Legislature has appropriated \$35,000 for the building and equipment, at the State University, of two laboratories, under one roof, one being a laboratory of hygiene. The building will be ready for occupancy next October. Dr. V. C. Vaughan, Member of the State Board of Health, and Professor of Hygiene in the University, is Director of the laboratory.

Prof. Vaughan's first Quarterly Report of work (the chemical laboratory being temporarily used) has been published by the Michigan State Board of Health,¹² and includes a history of important contributions to sanitary science. He has isolated the Eberth bacillus of typhoid from water believed to have caused that disease, he has caused a disease resembling typhoid by injecting these bacilli into an animal, and has caused a rise of body temperature in animals by injecting a ptomaine, formed by those bacilli, but sterilized before its use. Dr. Vaughan has been able to find these bacilli in the air of a house-drain into which discharged a soil-pipe carrying discharges from a typhoid patient. He has made cultures of the bacilli there found. Other cases of typhoid fever had apparently been caused by the inhalation of air contaminated by emanations from that same house-drain.

A SPECIFIC CAUSE OF TYPHOID FEVER.

That filth alone will not cause typhoid fever, in the absence of the specific cause, is constantly becoming more evident. A notable instance is given by Dr. F. H. Blaxall, R.N., in the *London Practitioner*.¹³ An outbreak of typhoid fever oc-

⁹ H. W. Conn, *Science*, March 16, 1888, pp. 123-6.

¹⁰ *Science*, March 16, 1888, p. 123.

¹¹ Dr. Sternberg's Address, *Sanitary News*, vol. xi, p. 50.

¹² Dr. Homan, *Sanitary News*, January 28, 1888.

¹³ Proceedings of the Mich. State Board of Health, January, 1888.

¹⁴ August, 1887, pp. 157-160.

curred among persons using water from a spring which, although known to be badly contaminated by excreta, had been used without causing typhoid fever for a period of fifteen years; yet soon after the arrival of cases of typhoid fever in the vicinity of the spring, 36 families were invaded, with some 80 cases of recognized typhoid fever, 8 proving fatal. All the persons attacked had drunk of the water from the spring. In this instance, the disease was not communicated from person to person, nor to persons who used the same water-closets as did those who had the fever.¹⁵ This evidence is especially of importance as to the protection of the water supply from typhoid excreta, and of the disinfection of all excreta from typhoid patients.

BACTERIA AND SUMMER DIARRHŒA.

Results of experiments and bacteriological observations in summer diarrhœa have been published.¹⁶ Many bacilli were studied, but one chief bacillus, which was found, somewhat resembled that of Asiatic cholera, but is shorter and thicker. Cultivation of bacilli from air from sewer ventilators showed some which resembled those found in the organs of persons dead from diarrhœa, but they were much slower in their growth. Those from the intestines developed rapidly, liquefied jelly became alkaline, and bacilli of the fifth generation emitted a powerful odor of decomposition. A very small dose of the artificially cultivated microbes produced a smart attack of diarrhœa.¹⁷

ALBUMINURIA FROM SEWAGE POISONING.

Dr. George Johnson, in the *Brit. Med. Jour.*, March 13, 1888, "directs attention to the fact that among the many causes of blood contamination and consequent albuminuria, sewage poisoning is by no means an infrequent one."¹⁸

BACTERIA IN CEREBRO-SPINAL MENINGITIS.

Fränkel, Weichselbaum and others, in a series of cases of primary cerebro-spinal meningitis, have obtained pure cultivations of Fränkel's pneumococcus¹⁹ which, I suppose, is the coccus first discovered by Dr. Sternberg, in his saliva, (*Micrococcus Pasteuri*, Sternberg), and which is fatal to rabbits, and has been found in pneumonia more frequently than other microorganisms. Weichselbaum has also described a new coccus in six cases of idiopathic cerebro-spinal meningitis.²⁰ Dr. F. Goldschmidt has reported the same microorganism in one case;²¹ and Dr. Biggs, of New York, in one case, found a diplococcus probably identical with the one described by the other two observers.²²

THE SPECIFIC CONTAGIUM OF SCARLET FEVER.

That there is a specific contagium of scarlet

fever is not doubted now, I suppose, by any intelligent physician; but just what that contagium is has not yet been satisfactorily proved. The results of Dr. Klein's investigations into the subject, in connection with the Hendon cow disease, supposed to be scarlet fever in the cow, have been strongly combated.²³

Experiments by Dr. Edington, of Edinburgh, (made at the suggestion of Dr. Jamieson,) carried on with bacteria from the blood, organs, and skin in different stages of scarlet fever, revealed one bacillus constantly present in the blood before the third day of the fever, and in the desquamating scales after the twenty-first day. This he concludes is the contagium of the disease.²⁴

DIPHTHERIA IN MAN AND ANIMALS.

Dr. Turner's report to the Local Government Board,²⁵ in England, in 1887, collected what was known on the subject of diphtheria in animals. Instances were given of its spread in pigeons, in fowls, and afterwards to families of persons, among swine, horses, cats infected from man and man from cats, successful inoculation of cats, and the occurrence of diphtheria among shepherds after the disease had prevailed among sheep. Bacteriological studies of diphtheria have led Loeffler to conclude that the bacillus is different in the calf and in the fowl, and still different in man.²⁶ Such discrepancies remain for further investigation: Probably much knowledge, useful for the saving of human life, might soon be worked out if the people would maintain more workers in this field of investigation.

SUPPURATION ALWAYS DUE TO MICROÖRGANISMS.

A FUNCTION OF THE LEUCOCYTES.

Although migration of leucocytes occurs under a variety of conditions and circumstances, the general principle that suppuration is always due to the action of microorganisms seems to be established.²⁷

A recent writer has said:²⁸ "There seems to be but little doubt that there exists a constant relation (as regards several of the infectious diseases certainly) between the amount of suppuration and the degree of immunity that different animals show to the respective diseases. The greater the emigration of leucocytes the greater is the insusceptibility, and *vice versa*, the leucocytes apparently destroying, or counteracting the effects of, the microorganism. Suppuration thus comes to be a conservative process, protecting the system from the action or entrance of the microbes. Perhaps this is always its function."

At any rate, knowledge of the relations of the white corpuscles of the blood to the specific mi-

¹⁵ London Practitioner, August, 1887, pp. 157-160.

¹⁶ H. Tomkins, M.D., London Lancet, August 20, 1887, pp. 361-3. Abstract in N. Y. Med. Jour., October 1, 1887, p. 390.

¹⁷ London Lancet, August 20, 1887, p. 363.

¹⁸ London Practitioner, April, 1888, p. 287.

¹⁹ New York Med. Jour., March 17, 1888, p. 288.

²⁰ British Med. Jour., August 20, 1887. N. Y. Med. Jour., October 1, 1887, p. 390. Science, February 10, 1888, p. 67.

²¹ British Med. Jour., June 8, 1887. N. Y. Med. Jour., October 1, 1887, p. 390. N. Y. Med. Abstract, July, 1887, pp. 251-5.

²² Abstracted in Brit. Med. Jour., August 20, 1887, pp. 416, 417, and 1 briefly in N. Y. Med. Jour., October 1, 1887, p. 390.

²³ N. Y. Med. Jour., March 17, 1888, pp. 288, 289.

croörganisms of disease seems to be progressing."

PERIOD OF INCUBATION.

Some experiments by Prof. Vaughan, of the Michigan State Board of Health, indicate that the length of the period of incubation of typhoid depends much upon the number of specific bacteria taken into the body, and whether or not a communicable disease shall be contracted may depend upon the quantity of the specific cause which gains entrance to the body.

DIAGNOSIS OF CHOLERA IN DOUBTFUL CASES.

Further evidence of the practicability of aiding the diagnosis of cholera in doubtful cases, by cultivations of the microörganisms from the intestines or the excreta, has been supplied by Drs. S. T. Armstrong and J. J. Kinyoun, of the U. S. Marine Hospital Service, and Drs. H. Biggs and T. Mitchell Prudden, of New York."

CAN CHOLERA BACILLI REPRODUCE IN WATER OF NEW YORK BAY?

The salt water in New York Bay has been "Sterilized and inoculated with pure cultivation of the spirilla of Asiatic cholera and also of Finkler and Prior," by Dr. J. J. Kinyoun, of the U. S. Marine Hospital Service," with the result that "These spirilla have not only been kept alive, but have also greatly increased in numbers." The inference is published that "If dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores where every condition favorable to its development and propagation sometimes exist." The temperature at which the cultivation was maintained is not reported; neither is the temperature of the water at the shore in the most dangerous season, but if there is a probability that such development can occur there, further experiments and observations of temperature will be awaited with great interest, because of the practical importance of the subject, for the safety of this country from cholera.

QUARANTINE.

There has apparently been great progress in keeping certain diseases out of this country by means which we yet call quarantine. Formerly yellow fever was so frequently introduced into New Orleans that many believed it was endemic there; and cholera was generally brought into this country whenever it was prevalent in Europe. Now both of these diseases are kept out. The great money losses to trade in New Orleans have tended to aid sanitarians in perfecting the quarantine at that point. Under the able leadership of that brilliant sanitarian, Dr. Joseph Holt, the quarantine at New Orleans has been brought to a high state of perfection. Perhaps the best evi-

⁴¹ N. Y. Med. Abstract, March, 1888, p. 56. Also Lectures by Prof. Ray Lankester, Sanitary News, Chicago, April 21, 1888.
⁴² N. Y. Med. Jour., Nov. 12, 1887, pp. 546-7 and 548-9.
⁴³ Sanitary News, Feb. 18, 1888, p. 153.
⁴⁴ There is now a bill before Congress to improve the National quarantine, which it is hoped may become a law. It has passed the U. S. Senate.

dence of the possibility of general progress, however, is the general criticism of what has heretofore received no attention. As an offset to the criticism of the quarantine system at New York, it should be noted that during the last year that port of New York has been tried—cholera was brought to it, and, so far as is now known, it was not allowed to gain a lodgment. Aside from speaking well of a bridge that allows one to cross in safety, there are other considerations which should make us slow in trying to displace State or local quarantines; there are vast State and local interests in trade and travel which should join with the interests of public health in building up and improving local quarantine administration. Thus far, the United States Congress has not exhibited such a steadfast purpose to guard the lives of the people as to inspire confidence in the United States Government as the best and only protector of the lives and health of the American citizens. Just now there seems to be those who urge that the National Government shall gain control of all quarantine. Without considering the constitutional objections, it seems to me that it will be much safer to hold fast to that which we have, at least until such time as the National Government shall demonstrate its ability to do as well. What is really needed is that the local quarantines shall be perfected; that the National Government shall add its best services to those of the States and localities; and that those other dangerous communicable diseases, diphtheria, scarlet fever and typhoid fever, which cause much more sickness and deaths than do yellow fever and cholera, shall also be excluded by quarantine. If it be argued against this plan that those diseases are endemic, it may be replied that before its exclusion yellow fever appeared to be endemic; and small-pox is still, yet we try to exclude it, and undoubtedly save thousands of lives thereby, and might exclude it almost entirely by more perfect methods.

YELLOW FEVER.

If, as reported, yellow fever is now present in Florida, there is cause for alarm which should lead to extraordinary efforts to limit that dread disease, because it is early in the season, there is no State Board of Health in Florida, and the inspection of travel, isolation of infected persons, disinfection of all infected articles—those measures which constitute the new "quarantine"—are not easily enforced, and in inland places can be avoided by those familiar with the locality. Nevertheless, these measures are the most promising yet suggested.

SMALL-POX.

Since January 1, 1888, small-pox has been reported in twenty-one States of this Union."

⁴⁵ Maine, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Delaware, Ohio, Kentucky, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Kansas, Colorado, California, North Carolina, Tennessee and Louisiana.

Small-pox is now reported in nine States as follows: Connecticut, California, Colorado, Illinois, Kentucky, New York, Minnesota, Pennsylvania and Wisconsin. Although small-pox is still (or was recently) present in nine States, it is not spreading, and it speaks highly for the utility of the public-health service generally throughout this country that although introduced into twenty-one States of the Union, small-pox has not been allowed to spread to any great extent, except in California, where its restriction, on account of the Chinese, was especially difficult.

CHOLERA SHOULD BE MADE A DISEASE OF THE PAST.

Dr. W. J. Simpson, Health Officer of Calcutta, has reviewed, in the *Indian Medical Gazette*, the evidence as to the influence of season, rain-fall, and water-supply upon cholera, accepting the evidence brought out by Dr. Payne²⁹ and elaborated by Dr. O'Brien,³⁰ that in Calcutta the cholera was greatly reduced by the improved water-supply, and the evidence collected by myself that it was greatly influenced by the rainfall,³¹ and he has added much to the completeness of these converging lines of evidence. Dr. Simpson says: "In the common condition of polluted wells and tanks, and the habits of the people, we have an explanation of seasonal cholera prevalence in Calcutta, synchronous with cholera prevalence in the neighborhood, while the increased scarcity of water in the town during the last five or six years, culminating in such expedients as underground tanks for collecting water which ought to reach at least the first floor of the houses, we have a fair explanation of the increased cholera prevalence of late years in Calcutta, out of proportion to the period between 1870 and 1880." Speaking of the effect of the rains, he says: "They purify the air, they wash the filth from the soil, they purify and give an abundant supply of water to the wells and tanks; but, in addition to these things, in the town they perform a most important function, they flush the drains." Dr. Simpson closes his forty pages with these words, "A study of the distribution, progress, and seasonal changes indicates that the chief factor is want of pure water."

Elsewhere I have suggested that "If the prevention of cholera in its home is so largely dependent upon the rainfall and upon a good water-supply, one direction is thus indicated for most successful efforts for its prevention in this country."³²

Here I wish to suggest that, inasmuch as all the cholera throughout the world is derived from the small endemic area around Calcutta, the nations of the earth might well undertake an inter-

national work for doing away with that "chief factor" of cholera prevalence in the endemic home of cholera, namely, that "want of pure water." Two-thirds of the cholera mortality in Calcutta has once been stopped in that manner.³³ The inference is plain that the other third might be stopped by more thorough but similar means, and if in Calcutta then also in the area around Calcutta. The work would be difficult, partly because about Calcutta the ground-water is brackish, but I believe the scheme is entirely practicable. It would be a noble mission to accomplish this, and, as an international work, it would "pay" in dollars and cents.

PURIFICATION OF WATER BY CHEMICALS.

Progress has been made in our knowledge of methods of improving public water-supplies. The practice of adding a minute quantity of alum to water in order to clarify it, is an old and very familiar one. Recently one method of applying it continuously to public water-supplies has been patented. Prof. Albert R. Leeds, of Hoboken, N. J., added alum, in the proportion of half a grain to a gallon of water, and found, with the precipitation of peaty matter, etc., a reduction of the bacteria to such an extent that whereas before precipitation it contained 8,100 colonies per cubic centimetre, after precipitation the supernatant water contained only 80 colonies. They were all the bacterium *lineola*, and by filtering this supernatant water through a double thickness of sterilized filter paper into a sterilized tube, he found no bacteria in the filtered water.³⁴ An interesting question is, whether or not the bacteria of typhoid fever would be removed by this same agent in a similar manner. Prof. Leeds suggests the addition, also, in certain cases, of lime or soda, or a minute amount of soluble iron salt, like ferric chloride, and its removal, together with the bacteria, by filtration.

VITAL STATISTICS.

Vital statistics supply an important basis for public-health work. We are dependent upon mortality statistics for our knowledge of what are the greatest dangers to life, and of what progress we are making in the prevention of deaths. Although the importance of vital statistics is well known to sanitarians, it is not yet appreciated by the people generally; and the practical work with statistics is so difficult that comparatively few master the general principles. There are no journals or ready means of comparison of views among statisticians; therefore progress is slow, especially in laws for the collection of vital statistics. Yet there is progress toward the collection and the improvement of some statistics in this country.

²⁹ Arthur J. Payne, M.D., Surgeon-Major, Health Officer of Calcutta. Report on Sanitary Measures in India in 1876-7, presented to Parliament, London, Eng., 1878, p. 118.

³⁰ J. O'Brien, M.D., Surgeon-Major, etc., Annual Rep. of Health Officer of Calcutta, 1884.

³¹ Trans. Am. Pub. Health Assoc., p. 165, vol. xi.

³² Trans. Am. Pub. Health Assoc., pp. 154-165, vol. xi.

³³ Trans. Am. Pub. Health Assoc., vol. xi, p. 165. Also, Cholera

Mortality in Calcutta, Simpson, p. 39.

³⁴ The Medical News, Phila., Sept. 3, 1897, p. 262.

In Minnesota, Dr. Hewitt, Secretary of the State Board of Health, has within the past year effected considerable in this direction. In the Connecticut State Board of Health Bulletin for February, 1888, Dr. Lindsley, Superintendent of Vital Statistics, says: "For the first time since these monthly bulletins have been issued, reports have been received at this office from every town in the State." The last quarterly report of the Illinois State Board of Health says: "For the first time since the collection of vital statistics was begun, all the counties have made returns of births and deaths."

SICKNESS STATISTICS.

For some purposes, including those of immediate action for the restriction of dangerous diseases, reports of sickness are much more valuable than the reports of deaths. An account of the methods successfully employed for several years in Michigan was given before this Section last year. Those methods are being continued in Michigan, and the State Board of Health of Ohio has established methods somewhat similar, which promise very useful results.

THE ETIOLOGY OF DISEASES.

Sickness statistics are especially valuable in studying the causation of diseases. The sickness is nearer than the deaths are to the time of the causation of the disease. The statistics of sickness and meteorology in Michigan have proved that most of the important diseases are controlled by conditions of the atmosphere. Even such diseases as small-pox and scarlet fever, due to specific causes, have close relations to the coldness and dryness of the air inhaled. This knowledge does not antagonize the importance of isolation and disinfection in such diseases, but it shows why these measures are especially important when the air is cold and dry; and, inasmuch as the virus of those diseases clings for a long time to infected articles, it explains why, unless disinfection is enforced at all times, these diseases tend to break out and spread during the cold seasons of the year. The explanation is found in the fact that nearly every one of the diseases of the throat and air-passages is increased after the inhalation of cold dry air. Communicable diseases which enter by way of the air-passages thus find at such times a most easy entrance. Consumption is found to follow the same law, increasing after the cold dry season of the year, and decreasing after the warm moist season.

It appears, therefore, that there has been great progress in our knowledge of the relations of sickness to meteorological conditions, so that, in Michigan at least, we are now able to say under what meteorological conditions each one of many of the most important diseases will increase or decrease in prevalence. The times, or at least the conditions of the rise and fall of the sickness

from these diseases³⁵ can be predicted in advance with almost as much accuracy as can the recurrence of the seasons. This may seem to you like laying claim to one of the grandest of recent human achievements, but I think the statement is strictly true, and this knowledge of the conditions tending to the occurrence of diseases, should aid us greatly in the adoption of measures for their prevention.

THE PRESIDENT'S ADDRESS BEFORE THE AMERICAN RHINOLOGICAL ASSOCIATION.

Delivered at the Annual Meeting, Cincinnati, Ohio, September 22, 23, and 24, 1888.

BY CARL H. VON KLEIN, A.M., M.D.,
OF DANTON, OHIO.

FELLOWS OF THE AMERICAN RHINOLOGICAL ASSOCIATION:—Under the present system of modern organizations, be it a political government, a commercial or scientific organization, be it ever so small, it is demanded from the head of such government, or such commercial or scientific organization, to deliver an annual message or address. A duty which I am called on to fulfil, regardless of my ability, and probably my errors recorded for generations to come; for words are like milk, which, once being drawn from its original source, can never be returned again. At this age of remarkable discoveries and wonderful developments in science, one might not at ease deliver his sentiments without fear that some one will reply to his errors, as times are not as they used to be. Three hundred years ago, could a person have been put to sleep and have continued in that state fifty years, on awakening and returning to the schools of medicine, he would have found the same textbooks, the same mode of teaching, the same elements of thought, perhaps without a single change.

Now, let a person remain in seclusion for not more than five years, on returning he would find many changes in the teaching and practice of medicine. For medicine in this century comes and departs with the fashions of garments, many have died with the Grecian bend, and as many more will die with the present mode of the posterior phenomena. The continual shifting in theoretical medicine gives a theory, but a short lease of life. A new theory established to-day, after laborious and tedious experiments, discarded to-morrow. Fruitful as has been the present age in changes of medicine, yet can any one of our medical colleges boast of a professor's chair on Rhinology? In many it is so entirely unknown,

³⁵ Influenza, tonsillitis, bronchitis, pneumonia, croup, diphtheria, scarlet fever, small-pox, consumption, remittent fever and typhoid fever. Tables and diagrams proving this, relative to some of these diseases, are published in Trans. Int'l Med. Cong., Washington, D. C., 1887.

that it is not even regarded as an object of secondary importance.

The Talmud relates that Rabbi Huna once asked his son why he did not attend the medical lectures of Rabbi Chisda? "Because," replied the son, "he only treats of temporal and wordly concerns." "What," said the father, "he occupies himself with that which is necessary for the preservation of human beings, and this you call wordly affairs!" Trust me, this is among the most estimable of studies. I will as well say to those who consider Rhinology of a minor importance that it is the most worthy study in the science of medicine. With the complete modern scopic inventions one cannot but help to progress in the investigations of diseases, and discover afflictions through the rhinol cavities diseases of other organs.

The rhinoscope brings before us stupendous facts which we are called upon to observe in our daily practice, which gives advantages in treating diseases of more obscure cavities, and lessens the suffering of the human race, and improves the health of many who are by nature predisposed to inroads of hasty death.

I must confess that I am unable to understand how a physician can treat a disease in which he received no instruction, and how a profession like ours intended self sacrifice to devotion or relief of human suffering could be guilty of empiricism. I consider those who treat diseases for which they are neither qualified nor prepared empirics, however conscientious and faithful a follower he may be of the catalogue of diseases contained in his symptom book. Yet I hold it dishonest if he tampers with that to which his eye is neither trained to see nor his hand to perform.

No branch of the healing art has, indeed, been marked with more empiricism than Rhinology; she struggles against far greater difficulties than any other branch of specialistic medicine, for both ignorance and prejudice have lent their aid toward retarding its advancement. It is a common thing for a traveling imposter to announce himself to the public as a catarrh specialist in addition to being a specialist of all other organs of the human body, while the regular practitioner as well, with his bulb spray, is ready to make fifty cents whenever he can, regardless of his brother's toil, and all his brother has learned by sacrificing with midnight oil to the knowledge of modern medicine.

As long as a physician brings his wisdom into market as an article of commerce, we cannot expect from him but to do anything for a remuneration, he will undertake to treat disease, even if he knows that he is deficient in that branch. There are many specialists who are pernicious to their class by dealing with their specialty like a merchant, who tries to sell other goods if he has not the article you call for. If you will ask him

for satin, which he has not in stock, he will aim to sell you silk; just so with dishonest specialists. They will try to make their patients believe that the disease of the organs afflicted come from diseases of their specialty, for the sake of gaining gold, which has always been a snare to men. Oh, gold! Chief source of hills, corruptor of life, that turneth all things wrong!

"Gold breaks through every sacred tie,
And bids a friend or brother die;
The fruitful source of kindred strife,
Gold would not spare a parent's life.
Long wars, and murders, crimes untold,
All spring from the cursed thirst for gold."

Physicians of vicious practice are doubly pernicious, being not only guilty of immoral practice themselves, but likewise of spreading them far and wide among their fellow practitioners, who profess better things. It is equally wrong to treat maladies in which diagnosis cannot be made, as it is to treat patients who apply for treatment of diseases with which they are not afflicted. "To those who are not sick the physician is useless, and the pilot to those who do not sail."

Cicero says: Those are wise monitors who teach us to do nothing of which we are doubtful, whether it is honest or just; for whatever is honest, manifests itself by its own lustre, but doubt implies the entertainment of injustice. Let me not, however, be misunderstood. It would grieve me even to be suspected of the folly and injustice of promiscuous accusation. Believe me that no one is convinced more than I that the medical profession possesses the highest grade of human respect, but there is never a garden ever so beautifully cultivated that has no weeds. The profession to which we belong is not an indolent occupation. Look at it's history and study the magnitude and quality of it's labors. Why has it done all this? What would it have done if it had not ambition and aspiration and much heart-hunger? Has not the medical profession had to fight it's way from the beginning of the history of man? What profession is there that has accomplished anything for which mankind are the better? Every branch of modern science, every field of modern research, every pursuit which has been under the subject of modern study has been cultivated by the medical profession. Look at the authors of every branch of specialistic science, and no one without the title of doctor of medicine, should such a profession be guilty of having within it's faculty malevolent fellows, who would be ready to commit any crime by treating suffering humanity for no other purpose but to their coffers fill? Branded with Ovid's description of deceit to whom all fingers point:

"Hither comes the tradesman, having a girdle around his robes, and in a state of purity draws

1888.]

some of the water to carry it away in a perfumed urn. He sprinkles his hairs, too, with the dripping bough, and in a voice accustomed to deceive, runs through his prayers O, Mercury! or have invoked the great Godhead of Jove, whom I did not intend to listen to me. But give me profits, give me the delight that arises from gain, and grant that I may find it lucrative to impose upon my customers."

Now, wherein lies the remedy? Gentlemen, the only true solution is a thorough medical education. I maintain that no one can receive a thorough medical education, without a thorough academical training, the mind that is trained to academical knowledge is inspired to a nobler and sublime course in life, in righteousness, piety, benevolence, industry, sobriety, equity, and frugality, kindled with aspiration, for a special pursuit in science to whatever calling by nature of human duty he may be assigned to. If the physician possesses an academical knowledge, he will make the boundless science of nature his study, he will aim to enquire from the beginning of the creation of man, and turn every stone to find inscriptions that may be engraved by organic life. He will form exalted ideas of monuments of primeval antiquity, and make use of all antemundios ways that may be conjured from the outmost bosom of the earth, in order to throw a bright light upon development of medicine. Such men can have no other motive than human welfare. And when they read the works of great men which existed in all generations, whose carcasses have long decayed, but their heroic name still lives, then they are kindled with high aspirations and are anxious to become heroes in the conquest of nature. Thorough education make men gentlemen by habit, by custom, by civilization, by law, and by dress. From the history of the infancy of our race unto the present day, developments of trades and arts are emerged from their primitive state to a perfection, by those who devoted their attention to one kind of skill, and made life almost double its value.

Those stupendous facts in which the whole spirit of the 19th century moves is due to a higher grade of education. In this age of multifarious learning, in which the whole spirit of humanity powerfully and wonderfully moves, cannot, as formerly, be overshadowed by ignorance and superstition. Thorough education will dissipate the darkness of empiricism and disloyalty to humanity. The inventions of surgical instruments is the wonder of this generation. Every day we hear of some new design that harnesses a new force, and assists in means of curing disease. The most useful of all of them are the different scopic inventions, and by their aid physicians are enabled to make correct diagnosis which leads to a rational treatment of disease of more obscure cavities. To the scopic appliances

we are greatly indebted for the development of specialties in the practice of medicine, and yet has it not developed charlatans and empiricism? Has not the vaginal speculum been the cause of producing so great an army of gynecologists that 99 per cent. of the young men who graduate in their schools, regardless of their pathy, immediately equip themselves with a chair and a speculum? Has not the rectal-speculum encouraged the so-called pile doctors? And has not the rhinoscope been the means of producing thousands of traveling cataract specialists, who pretend to see more with their appliances than the ordinary intelligent physician?

"The doctor's optics must be keen,
Who sees what is not to be seen."

Gentlemen, these obstacles may indeed be great, yet, not insuperable, and we should not allow them to daunt our spirit.

I now come to that which to us is the most painful and dearest part of our duty, and on which the spirit of our entire profession is based, and that is charity. We may ask ourselves, might not a subdivision in our profession cause great destruction to the essence of our occupation? Will it not drive from our doors charity patients? It is necessary for a specialist, in order to secure the comforts of life, to charge larger fees for their services than the public has been accustomed to pay general practitioners. This being understood by the poorer classes, might not they fear exorbitant prices, and in all probabilities suffer from painful and dangerous disease before they would venture to consult a specialist. There exists three classes of charity patients:

1. Those that ask charity.
2. Those that are prevented from asking.
3. Those that cannot ask.

The first is the one that justly applies for it. The second are those who are deprived of the liberty of asking, by being in prisons, asylums, almshouses and hospitals; they cannot receive any other treatment than that furnished by the institution. Such institutions generally have physicians who, by their political influence, have mastered the entire science of medicine. The third is the most pitiful of all, and in the pride of charity he suffers the pangs of death; aside of fearing false modesty of exposure, he also dreads rejection to his askings of his fellow men.

Gentlemen, let it be known that we are not specialists for the purpose of gain, but from conviction that the knowledge of medicine is too great a science for one man to accomplish as a whole, and that we are not practicing for revenue only; we are also ready to receive any one that applies to us for charitable treatment. Let not this beautiful passage of the New Testament be cast upon us: "Though I speak with the tongues of men and of the angels, and have not charity, I am become as sounding brass, or a tinkling

cymbal." Those who give charity to suffering for the purposes of fame, is mockery and indignity; he who uses the crown of charity in order to gain, deserves not the name physician. Let our Association become famous not only in the annals of science, but also for philanthropy. Let us not be in a hurry for wealth, let us not immerse ourselves in a simple study of augmenting a fortune and lose the art of reason by deserting the post of a physician. Let us also be specialists in philanthropy. Look at the history of philanthropists, and you will find that they are all specialists in their cause. The immortal Valentine Haüy spent his life in philanthropy for the blind; Johannes Falk, the philanthropist for children; Henrich Pestalozzi, the philanthropist of education; Augustus Herman Francke, philanthropist of orphans; Bartholomew de Las Casas, philanthropist to American Indians; John Howard, philanthropist of prisoners; Sir Moses Montifiore, philanthropist of the oppressed by religious persecutions, etc.

The true physician should be the eyes of the blind, the ears of the deaf, the tongue of the dumb, the brain of the imbecile, and the limbs of the cripple.

By following this rule our Association will become prosperous and renowned and conspicuous among men. While our Association is still young, yet it deserves congratulation for its past success for her wonderful work in progress of practical suggestions in rhinological appliances, and of treatment in diseases of rhinology we can congratulate ourselves for opening the broad gates to the obscure cavities of the upper respiratory tract. We can congratulate ourselves for its wonderful development in training and educating the world to the spray method, to the use of absorbent and essential oleates, for the revision of proper pathological nomenclature, for educating the physician to look after the upper respiratory tract, whilst he is making an examination of the entire body, and for calling the attention of the ophthalmologist and otologist to look for turbinated and other processes that might have produced disease of the organs in their specialty. We can also congratulate ourselves for the world-renowned repute, for the wonderful growth of our organization, and more so for the chosen quality of its members.

In conclusion, gentlemen, I will thank you for the great honor you have bestowed upon me by making me chief magistrate of this worthy organization. You may feel assured that no one is more sensitive to its dignity than I. I also thank you in the name of my friends and associates, who feel highly honored by my elevation. Trusting that we will live and prosper to see every one of our Fellows to pass the high honor which I am now about to deliver to some one more worthy than my humble self.

ORIGINAL ARTICLES.

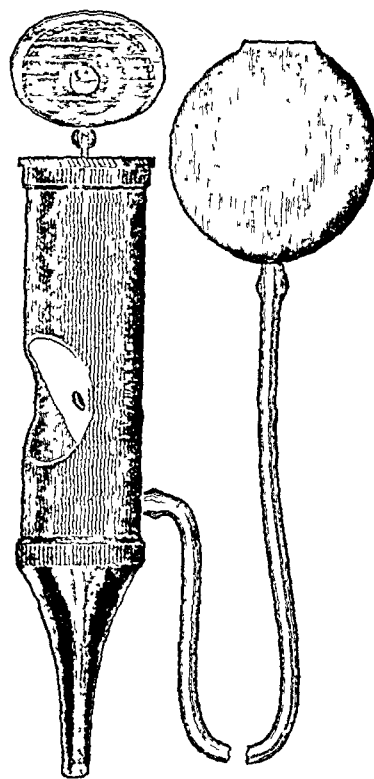
A NEW OTOSCOPE (PNEUMATIC) FOR THE DIAGNOSIS OF MIDDLE-EAR AFFECTIONS UNDER PASSIVE MOTION.

AN IMPROVED TONSILOTOME. A NASAL SPECULUM.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY SETH S. BISHOP, M.D.,
OF CHICAGO, ILL.

Preliminary to a discussion of pneumatic experiments upon the ear, it will be a natural proceeding to describe the instrument by means of which we may produce and observe the effects of passive motion in the drum.



The pneumatic otoscope which I have devised for the purpose named consists of a small milled cylinder with an ear-funnel of the most serviceable pattern at one end, and an eye-piece containing a lens, around which revolves an adjustable mirror, at the other end. In the side of the cylinder a spacious aperture admits the light to the illuminating surface beneath. At the funnel end of the instrument is a pneumatic chamber provided with a flexible tube ending in a rubber bulb, or a diminutive syringe, or a lip-piece, as one may prefer. Objection might be made to using the lip-piece for producing suction for fear that the air from the external auditory meatus might enter one's mouth, but it cannot do so if the funnel is properly adjusted to the canal, for the air chamber of the otoscope represents many times the volume of the column of air contained in that

part of the meatus that lies between the end of the funnel and the drum. It is necessary to exert only slight suction force to cause excursions of the drum membrane sufficient for our purpose. The tip of the funnel should be covered with a section of the thinnest soft rubber tube, about one inch in length, to insure an air-tight fit into the meatus. If the opening of the canal is very large the rubber tube should be rolled back upon itself, so as to form a shoulder on that part of the funnel which closes up the mouth of the meatus when the otoscope is inserted. The rubber not only secures a perfect adaptation of the parts to each other, but prevents the funnel from pressing uncomfortably against the walls of the canal. If the meatus is very narrow, a small section only of the rubber should be slipped well up on the funnel to form the shoulder, leaving the end free to enter about half an inch. When it is to be employed as an ordinary otoscope, without the pneumatic experiment, the rubber tip need not be slipped over the funnel.

This instrument is the result of a considerable experience with Siegle's pneumatic speculum, improperly called an otoscope. The advantages of the pneumatic otoscope over the speculum are: First, it is self-illuminating, not requiring the aid of a hand mirror, or forehead mirror, the light being accurately focused on the drum; secondly, it affords a magnified view of the drum; thirdly, the object mirror presents a perfect picture of the interior of the ear, and without the necessity of looking through a lens; fourthly, it can be operated in a smaller canal than will admit the speculum; fifthly, the bright reflection of light into your eyes by the glass of the speculum, the black background of which converts the glass into a mirror, can be avoided in the otoscope by the proper and unvarying relations, and the color, of its various parts.

The teaching of otology is much facilitated by means of this instrument in that the instructor may be sure that students are looking upon the field of vision which is being described. Heretofore it has been necessary to bend closely over patients to look through an otoscope while it was being adjusted, then in rising to afford students the opportunity of inspecting the drum, the necessary movements of your body, or of the patient's, would throw the drum out of the field, or darken it, and compel a readjustment of the instrument. These disadvantages made demonstrations uncertain, long and tedious. The object mirror allows the teacher to stand or sit erect by the patient while he takes observations, then by a slight movement of his head only, or by a turn of the mirror, he may allow any number of students to pass in line, each viewing what is being commented upon. If one pays attention to the lighting up of the end of the funnel, as he can do by

looking obliquely through the aperture over the reflector, he may be sure that the drum is illuminated and within sight. This is made practicable by dispensing with the large funnel fixtures that project from the sides of other otoscopes, and that prevent the teacher from knowing whether the drum is illuminated properly or not, except while he is looking through the lens. The advantage of dispensing with the attachment is not diminished in the least by sacrificing any of the brilliancy of illumination. The objection which some physicians have urged against magnifying otoscopes, that they were compelled to look through a lens, is met in this instance, for one needs only to look at a plane mirror to examine the drum and canal. Should it not be desired to use the object mirror, except in demonstration, it can be turned back, or removed by slipping the adjustable ring, to which it is attached, off from the cylinder.

THE PNEUMATIC TREATMENT.

The value of passive motion in the treatment of stiff joints and atrophied tissues is well recognized in general surgery. The application of the same principle to the same conditions in aural surgery is attended with equally beneficial results. But this is a neglected fact, for you rarely see or read of its use in ear treatment. So little has been written upon the subject, as compared with its importance, that no apology is needed for speaking somewhat minutely in respect to the behavior of the drum head and ossicles under such experiments as the following.

In examining and treating the middle ear with the pneumatic otoscope the instrument should be introduced into the auditory canal with the longitudinal axes of both corresponding, just as any otoscope should be placed. If the instrument is correctly adjusted, a slight suction on the rubber tube will cause the little column of air, which lies between the drum and the funnel, to move outward to the air chamber. The examiner is supposed to be inspecting the drum at the same time. If the drum is healthy, he will observe the membrana tympani perform an excursion toward his eye, carrying the handle of the mallet with it, while the triangular light spot changes position as the relative concavity of the membrane changes. Release the column of air and it moves inward again, allowing the drum head, manubrium and light spot to resume their former positions. Press upon the column of air and it moves inward, carrying the membrane and mallet handle with it, causing motion in the joints of the ossicles; the short process projects outward prominently, the light spot changes with the increasing concavity, and the ossicles become more prominently visible as the membrane presses around them. By alternately rarefying and condensing the air in this manner the amount of mobility in the drum head and the chain of bones may be determined under brilliant illumination and magnified inspection. If ankylosis of the

joints of the ossicles, or if bands of adhesions between the bones and the walls of the tympanum exist, the handle of the malleus will be seen to be impeded in its movements, or it may remain fixed, while the membrane about it may be quite flaccid. At this point I wish to anticipate criticism by stating that I have never known any ill effects to follow this line of treatment. If the membrane is greatly thickened in patches, or if it contains calcareous deposits, these portions will be seen to resist the action of the vibrating column of air, while normal parts, and areas of thin cicatricial tissue that indicate the location of former perforations, may respond readily to the experiment. In cases where the drum head is very thick, or where the ossicles are bound down by adhesions to the walls of the tympanum, no perceptible movement may be obtained at first, but decided improvement often follows a persistent use of the pneumatic treatment.

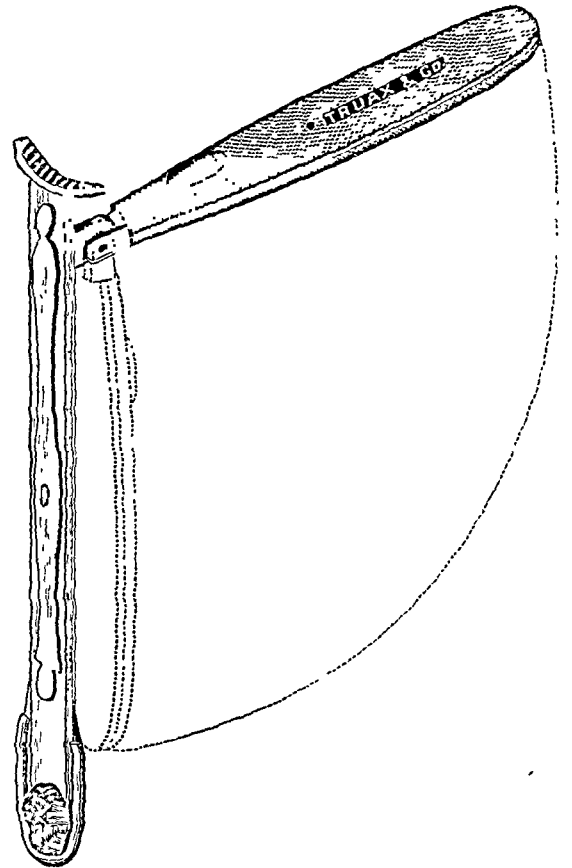
In obstinate cases the progress may be hastened by making pressure directly upon the processus brevis by means of a probe covered with a soft rubber tip. Stiffness in the joints may be overcome in this way so as to facilitate the action of the otoscope. One should press gently on the process until the handle moves, then retract the probe until the malleus resumes its former position, press again, and so repeat the movement several times. Then the pneumatic principle of the otoscope should be applied until one is satisfied that the advantage gained will not be lost. The pressure need not cause pain, but the mallet should be moved until the patient experiences a sensation of movement or of sound. In several patients in whom I have applied passive motion in this manner during the last few months I have increased the hearing-distance for the watch from contact to three, twelve, twenty and thirty-two inches, or one-half the normal distance.

The otoscope may reveal an opaque membrana tympani, so hypertrophied and stiff that it does not yield to the pneumatic treatment. In such a case it is nothing less than a barrier to the admission of sound waves to the perceptive apparatus, and would seem to justify the complete removal of this barrier, when the auditory nerve is not diseased. For if the perceptive apparatus is in condition to do its work, while the conducting apparatus is a hindrance instead of a help, the sooner the obstruction is removed, and sound admitted, the better. It should be understood that this statement is made on the supposition that the condition referred to has proved intractable under the usual treatment. Thus it will be seen that the pneumatic otoscope becomes an indispensable factor in determining the precise condition of an organ so hidden away by nature in a deep recess of the head that any auxiliary to our present helps in diagnosis and treatment ought to be welcome. We are not able without it to judge

intelligently when so delicate and important an operation as resection of the drum head may be necessary as a last resort. And while I am conscious of the strong sentiment of opposition to such operations, I venture to improve this opportunity to urge the occasional necessity and the justifiableness of such an operation, and to invite the most searching criticism of the logic of this procedure.

AN IMPROVED TONSILOTOME.

Any physician who has had a considerable experience in tonsilotomy, with the various tonsilotomes, will not be likely to deny that these instruments are generally too complicated. They are armed with needles, barbs, or sharp-toothed forceps for piercing the tonsil and dragging it through the fenestra before any cutting is done by the blades. A tonsilotome constructed after



the pattern I have made renders the barbs, etc., unnecessary. It reduces the painfulness of the operation by one-half; it divests the procedure of any danger of an accident to the operator or patient; it makes a skilful and easy operation possible with a minimum amount of experience; it resembles a large folding tongue depressor so closely that children usually offer no opposition to its introduction for the removal of the first tonsil; and it combines strength and compactness with simplicity of construction. It is made on the principle of the guillotine, the blade of which is propelled by the thumb of the same hand which

grasps the handle. The latter is set at such an angle to the shaft as will permit the most perfect coördinate action of the muscles of the hand and arm of the operator. All the work may be done with one hand. This advantage is not a small one for two reasons: The powers of coördination and antagonism of muscles are far more perfectly under control in operating an instrument that requires but one hand, than they are when both hands must coöperate; and one hand of the operator is left free to hold the head of the patient, if necessary, as the dentist does in extracting a tooth. The advantages of a tonsilotome that can be operated entirely by one hand are about the same as in a tooth forceps which does not require two hands to manipulate.

I have had two sizes manufactured, the smaller having a fenestra of the calibre ordinarily found in such instruments, the larger supplied with an aperture larger than the largest Mackenzie tonsilotome, while it is so compactly constructed as to require less space in which to operate. I have used the larger size to extirpate enormously hypertrophied tonsils in children as young as two and one-half years, where it was impossible to insert the Mackenzie instrument of the necessary size. The smaller one is sufficient for the majority of cases, but the fenestra is not capacious enough to admit the bases of the extraordinary glands we occasionally see. It is advisable to remove the whole tonsil, and as the tops only of the largest tonsils can be severed with the smaller instruments, it may be better to have the larger size if but one size is to be kept.

The blade is so protected as to make it impossible to wound the ascending pharyngeal, or the internal carotid artery. The shaft that propels the blade is of such width as to make the use of a gag unnecessary, for it protects the finger of the operator from the patient's teeth, if it is placed in the mouth to ascertain when the fenestra is in such position as to embrace the whole tonsil, as it is necessary for one to do when operating in children with other tonsilotomes. Since I have used this guillotine I have not had my finger bitten, while it was not an uncommon occurrence before to come off second best, as far as pain was concerned. With the shank wide enough to afford protection it is unnecessary to introduce the finger into the mouth, for the teeth and lips cannot close enough to prevent the operator from seeing plainly the field of operation. There is no working in the dark, or fear of damaging structures you do not wish to attack.

The handle is firmly fixed to the shank with a hinge-joint and self-acting spring-lock, so that the fenestra can be pressed down around the base of the gland with any degree of power desired. This feature dispenses with any necessity for hooks, forceps, needles, or barbs for spearing the tonsil. The latter being a soft, fleshy mass, adapts itself

to the shape of the fenestra and protrudes through it the instant its base is pressed about. The pain of spearing or tearing the tonsil by toothed or barbed accessories, designed to drag the gland through the fenestra before the blade cuts, excites the most vigorous struggling and resistance on the part of a child. Even when the utmost care has been exercised, the barbs have pierced the soft palate, or the surgeon's finger, instead of the tonsil. Moreover, the gland always comes out with the instrument, the same as though barbs were used. There is another important advantage in having the handle attached to the shank with a hinge provided with an automatic lock, for the cutting extremity of the instrument cannot be thrown out of your control by a disturbance of the coaptation of its parts. The last time I operated with a Mackenzie tonsilotome the child jumped just as I was placing the fenestra about the tonsil. The shank revolved upon the handle, leaving the latter in my hand, while the cutting end was entirely displaced and removed from the vicinity of the gland. It is impossible for this improved tonsilotome to play you such a trick. The handle is made of rubber, knurled so as to afford a firm grip, and it contains a concealed spring-lock operated by a convenient thumb-plate. When this is moved downward the hinge-joint is unlocked, and the instrument folds upon itself like a pocket-knife, occupying the space of about an inch and a quarter in width and thickness by six and one-half inches in length.

Another pertinent point that should not be neglected in this age of antiseptics, is the provision for cleansing and disinfecting the three pieces of which the instrument consists. By raising the proximate end of the horizontal top spring of the shaft and swinging it 90° to either side, it becomes disengaged from its lock and it liberates the blade from the shank. This arrangement makes it as simple as possible for taking apart, cleansing and putting together again.

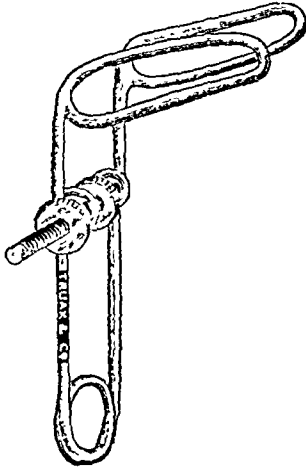
In amputating the apex of a relaxed and elongated uvula the tonsilotome should be used with the handle directed upwards. It should occupy just the reverse position as a uvulotome to the one it occupies when used as a tongue depressor.

Another merit that is not too small to mention is that its simplicity of construction renders it inexpensive.

A NASAL SPECULUM.

The nasal speculum that I have constructed will require but a moment to describe. It is made of spring wire, is self-retaining, and as simple as such a thing can be made. The surfaces that come in contact with the mucous membrane are flattened so as to relieve the pressure of its accompanying discomfort as far as possible. The amount of pressure exerted by expansion can be accurately modified by the counter thumb-screws.

When the speculum is in position, entirely within the vestibule, for examination or operation the handle is directed at such an angle as to be out of the way of the operator. The tendency to slip out of place is overcome by its lightness, and by a nice adjustment of its set-nuts.



A nasal speculum is a disagreeable tool at best, on account of the sensitiveness of the nasal cavities, but this one carries as little discomfort with it as any effective speculum can.

These instruments are manufactured for me by Charles Truax & Co., of Chicago.
719 West Adams Street.

OOPHORECTOMY FOR PROLAPSE OF RIGHT OVARY INTO DOUGLAS' CUL-DE-SAC.

Read before the Medical Society of the District of Columbia, April 18, 1888.

BY J. F. HARTIGAN, M.D.,
OF WASHINGTON, D. C.

This was a very unpromising case. The patient, æt. 36, unmarried, has been under my treatment almost constantly for the past nine years. When she was only a month old her mother died of phthisis. Being a puny, delicate, bottle-fed infant, she was raised with great difficulty. In early childhood she was a subject of chorea.

I was first called to see her in January, 1879, for pleuritis and pneumonia. In the summer of the same year she had intermittent and typhoid fever, the anæmia following leading to ascites and dropsy of pericardium. On account of several attacks of hæmoptysis she went to England in November, 1879, on a visit to relatives, and stayed fifteen months. The trip was partly beneficial, although while away she had three hæmorrhages. Several lighter ones occurred after her return, but with the exception of the occasional coloring of the sputum, none have occurred for five or six years. These hæmorrhages were not vicarious, as they came on without regard to the periods of menstruation; besides, the other symptoms, as

cough, expectoration, etc., pointed to manifest lung disease. About the year 1884 nasal catarrh appeared, associated with endometritis and hyperplasia of the cervix, which would yield to treatment for a while, but return from time to time. Another circumstance in the case, which may be well to mention, occurred last October. After a heavy dinner she said she would have to sit down, complained of a swimming of the head, everything appearing dark before her, and immediately lost her senses and slid off the chair. The servant in her alarm dragged her to bed by the shoulder, dislocating it. This was easily reduced upon the administration of ether, although several weeks elapsed before she had the full use of her arm.

Her first pain in right inguinal region dates back to October, 1886, when, as she states, while riding in a street car she was severely jolted by the car running off the track; pain followed immediately, which subsided the same night, recurring when she walked or rode.

In May last she suffered a severe exacerbation while in Virginia. On my return from abroad last October I found her practically bedridden, with marked evidence of phthisis. Under the use of cod-liver oil and other building-up treatment she improved to a remarkable extent, but still complained of a dull sickening pain in right inguinal region. This was aggravated by any attempt to walk across the room, upon defecation, and before, during or after menstruation. I now for the first time discovered retroversion of the uterus, and on digital examination, prolapse of the right ovary into Douglas' cul-de-sac. How long the latter condition existed I am unable to say, but probably its starting point was in October, 1886, as already mentioned; the symptoms in the interim being mitigated principally by rest in the recumbent position. It is needless to say that all palliatives, such as bromide of potassium, counter-irritation, hot water injections, and endeavor at reposition by the genupectoral method with lint soaked in glycerine, proved of no avail. Even different kinds of pessaries seemed to aggravate rather than relieve her symptoms, so that hypodermic injections of morphia, and by the stomach, became the rule. These would only give temporary relief, however, the effects wearing off in two or three hours.

At last oöphorectomy was proposed as holding out the last chance of relief from her deplorable condition. To this she and her father readily consented. Accordingly on March 31st I performed the operation at Providence Hospital, assisted by Dr. Joseph Taber Johnson, whose kindness and valuable advice I desire here to acknowledge. There were also present Drs. Bulkley, Crook, H. L. E. Johnson and Osmun, Dr. Cole, the House physician, administering the ether. After the usual incision in the median line, not

much difficulty was experienced in reaching the ovary, and separating it from its adhesions behind the cervix. No oozing of the pedicle followed the removal of the organ with the tube, which, in addition to the prolapse, presented a hæmatoma partially organized, apparently involving one-third of its substance, and commencing cystic degeneration. The patient made a fine recovery, chatting and laughing the next day. Only once the temperature reached 100°. On removing the stitches the seventh day not a particle of pus was seen anywhere; everything was perfectly dry, there being primary union along the whole line of incision. She has had no pain whatever since, has menstruated normally, commencing the third day, and although it lasted five days she would not have been conscious of the fact had not the nurse called her attention to the napkins. Her previous sickness was on March 13th. The night following the operation there was some pain in the line of incision, and nausea, but no morphia or medicine of any kind, except for her bowels, has been administered. It is now eighteen days since the operation. She is sitting up without any pain, although for months previously she was confined to bed on this account. Instead of laying awake at night racked with suffering, she sleeps soundly, relishes her food, and, to use her own language, she intends hereafter to enjoy life. I will keep her in the hospital yet, however, for five or six weeks, hoping that all chances of a return of the old lung difficulty will subside.

The results in this case so far are very flattering, and beyond reasonable expectation. It is also interesting from the fact that the displacement was on the right side, about 25 per cent. only into Douglas' cul-de-sac being found in this situation, the large majority of those reported being on the left side, for well known anatomical reasons.

I may add in closing, the satisfaction that any one of the three conditions presented by the specimen, viz., the prolapse, the hæmatoma, and cystic degeneration, fully justified the operation.

ON THE TREATMENT OF LARYNGEAL AND PULMONARY PHTHISIS BY A SPRAY OF HOT VASELINE IN CONJUNCTION WITH MENTHOL AND IODOFORM.

BY HOWARD SMITH, M.D.,
OF CHARLESTOWN, MASS.

For two years the writer has employed a spray of pure hot vaseline, medicated with menthol, iodoform and ol. eucalyptus, singly or in combination, in the treatment of laryngeal and pulmonary phthisis, with results which warrant him in describing the method with some detail and in

asking a trial of it at the hands of other practitioners.

The employment of fluid co-moline is best avoided, because it is frequently irritating and somewhat gummy, while the translucent, semi-solid product of the Chesebrough Mfg. Co. is pure, unchangeable and perfectly bland.

In order to conveniently warm and spray this vaseline the atomizer figured above was devised, which being charged, is held over a lamp or other source of heat until the contents are thoroughly liquefied and the nozzle has become as warm as can be conveniently borne by the patient, an essential point which is believed to contribute much towards a successful result.

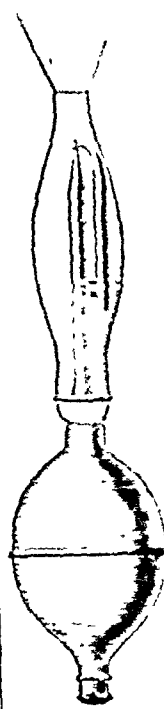
One nostril is then closed by the nozzle of the instrument, and the rubber bulb is worked vigorously during inspiration, by which the spray is drawn deeply into the lungs, as is evidenced by the sensations of the patient and the reappearance of the spray upon the expired breath.

The nasal passages and bronchial tubes being thus coated, the inspired air must, for some time afterwards, be impregnated with any volatile substance with which the vaseline is medicated, and thus the remedy is carried still further along the respiratory tract.

Rosenberg, of Berlin, has obtained excellent results in the diseases mentioned from endotracheal injections of a solution of menthol in olive oil, but the writer considers a warm spray of mentholated vaseline preferable, particularly because the former requires the attendance of the physician twice daily, while the latter can be administered by the patient himself.

He remarks upon the antiseptic properties of menthol, having found it, in a gaseous form, to be destructive to pure cultivations of the tubercle bacillus, and also states that the well known anæsthetic effect of the drug is cumulative; that is, lasting for a longer period after each injection, and enables the patient with laryngeal phthisis to eat at once without pain. (See article by Beechay in *Brailhwaite* for July, 1888.) The strength employed by him is 20 per cent., but 1.5 per cent. has been found enough for use in the atomizer by the patient himself.

Iodoform was several years ago much employed in the treatment of pulmonary phthisis, dissolved in ol. terebinth and sprayed by means of the steam atomizer. The results were encouraging, but the combination was extremely disagreeable to patients and attendants. Cod-liver oil is an excel-



lent solvent for iodoform, and when sprayed floats in the atmosphere of a room in a remarkable way; but, upon the whole, pure vaseline is a better menstruum and, with the addition of a few drops of ol. eucalyptus, the odor is quite bearable and the results sometimes more satisfactory than those obtained from menthol. The formula used is as follows:

R. Iodoformi pulv. grs. x.
Ol. eucalypti. gtt v.
"Vaseline" 5ss.
M.

Both menthol and iodoform are antiseptic and anæsthetic, thus fulfilling the two very important indications of allaying cough and modifying expectoration, but in addition have points of difference which will influence the selection of one or the other. Menthol is stimulant to the vascular tissues and promotes absorption, while iodoform possesses valuable alterative properties, hence it is better to select one and keep the other in reserve, as the antiseptic and anæsthetic properties of either are usually sufficient. The addition of cocaine may be necessary in cases of laryngeal phthisis, but one of the other two remedies will usually be found capable of affording, in cases of pulmonary phthisis, great relief from cough, and of diminishing expectoration and improving its character.

Space can hardly be claimed for more elaboration in description of the method of treatment advocated here, and all references to cases may be omitted, as the remedies spoken of have had their respective values determined, the only point which this communication is intended to emphasize being the employment of a spray of hot vaseline as a menstruum.

MEDICAL PROGRESS.

SURGICAL TREATMENT OF SUPPURATING VENEREAL BUBO.—KARL SZADEK thus describes the treatment carried out at the Military Hospital at Kiew:

In beginning bubo, so long as there is no fluctuation, or redness of the skin, simply rest and prevention of irritation or injury to the inguinal region, at the same time appropriate treatment is employed for the soft sore.

If the skin is reddened but fluctuation not well established over the abscess, hot compresses, made with a carbolic solution, are to be applied until there is established complete suppuration of the swelling. Painting with the tincture of iodine does not meet with favor. As soon as fluctuation is made out in the whole abscess and it is ripe, a surgical opening is necessary. A mild degree of chloroform narcosis is recommended, as the necessary steps are very painful. After most careful

cleansing of the skin in the inguinal and genital regions and the thigh, as well with soap, brush and warm water and shaving off the hair of the pubes, the operation field is to be disinfected with a five per cent. carbolic, or a one per cent. sublimate solution. A free opening is then made, in most cases parallel with Poupart's ligament, by means of a small bistoury. The incision must correspond with the length of the bubo. After evacuating the contents any recesses or sinuses are to be separated by means of a pair of scissors and all glands, both those which have suppurated and others which are enlarged, must be removed with the finger, and remnants of glands and firm granulation tissue scraped out with Volkmann's spoon. If an affected gland does not yield, its capsule must be opened with the knife and its contents removed. If the cutaneous covering is destroyed in a large area it is best to cut it away with scissors. It was only necessary in a single case to apply a ligature on account of hæmorrhage. After the bleeding has been stopped with cotton-tampons, the cavity is to be washed out with a corrosive sublimate solution and the whole cavity sprinkled with iodoform alone or mixed with alum, packed with iodoform gauze, and an occlusive dressing applied. The latter consists of a few layers of sublimate gauze and salicylic or sublimate cotton, upon which a mass of jute or tow is placed. The whole is then covered with mackintosh or glazed paper and fixed with turns of a moist, wide dressing bandage.

The first permanent dressing, when well applied and the patient keeps quiet, can remain for from two to five days. If it becomes soaked with the secretions it may have to be changed earlier. In the second dressing the edges of the wound are washed with a five per cent. carbolic or a one per cent. sublimate solution, the wound covered again with iodoform without washing out the cavity or applying tampons, and a fresh dressing applied. This and following dressings can, with few exceptions, be left from five to ten days and changed only if oozing is noticed from the edges. Besides the 274 chancroidal buboes there were treated during five years twenty-six syphilitic buboes, and twelve times the inguinal glands were removed by operation on account of tubercular adenitis. The duration of treatment of chancroidal buboes averaged thirty days. Complications with phlegmon diphtheria. Chancroidal destruction of the walls and edges, etc., were never encountered in the acute or subacute chancroidal buboes. In five cases erysipelas occurred, but it seemed to have little influence on the course of the result as healing always took place. In twelve cases eczema of the neighboring parts came on, delaying healing from ten to twenty days, as the dressing had to be frequently changed. The course of the opened suppurating syphilitic buboes, which were usually not scraped out but had

the glands respected, was usually favorable and no complications occurred. In tuberculous adenitis the wounds healed kindly and for the most part quickly when the individual was strong and otherwise healthy, after extensive scraping out and extirpation of the glands. In anæmic and broken down patients, the healing was slower. Although iodoform was employed in large quantities, intoxication from it was never witnessed. In all the varieties the scar was as a rule smooth, even often linear, and after a time scarcely noticeable.—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1888.

CARDIAC HYPERTROPHY WITH VARIABLE MURMURS; PROBABLE OCCLUSION OF THE THORACIC AORTA.—The following case came under the care of SIR HUGH BEEVOR and DR. DUFFIN, at King's College Hospital, London:

W. B., æt. 24, was admitted into the hospital complaining of pain in the right side, with a temperature of 100°. These symptoms left him after a few days. He was a soldier. He had previously had very good health but, after two years' service, was discharged invalided. Through the kindness of the medical department at the Horse Guards, his health-sheet was obtained, where he is described, on enlistment, as a laborer with good physical development. He was sent to India, where he was in hospital on four occasions for diarrhoea and dysentery, spending 120 days out of 15 months in hospital; he was then sent home to Netley and, after 14 weeks, discharged for heart disease. Habits intemperate. His brothers and sisters are alive and healthy; the father and mother died of tumor. The chest showed a fulness below the right axilla, and strong pulsation could be felt there, and be traced up into the axilla; on the back large arteries could be traced on either side, from the level of the first dorsal vertebrae down to the sixth and fifth on right and left side; and corresponding to the pulsation in the right axilla, a pulsation was felt in the left; the arteries ran down to the ninth and eighth intercostal spaces respectively. The right subclavian was larger than the left; an artery was felt under the right costal cartilages, near the sternum. In the abdomen, the abdominal aorta could not be felt pulsating, only the right external iliac; in the lower limbs the femoral arteries could not be felt pulsating, only the right posterior tibial artery. The pulse at the wrist was 100, high tension, and the artery large; there was also marked pulsation to be felt behind the manubrium sterni. There was visible præcordial pulsation in the fourth and fifth interspaces, but the apex beat was felt most in the sixth, at the nipple line; præcordial dulness was increased. On auscultation, three distinct areas of systolic murmur were noted; at the base, to the right of the sternum, in the second and third interspaces, and to the left in the second and all

the first interspace; below, a systolic murmur was heard over the area of cardiac dulness, and across the sternum to the right costal cartilages. The character of the murmur was different at base and below; at the base, on the right, it was very whizzing in character, and in time came just before the second sound; below, on the left, it resembled an exocardial murmur; on the right it was louder, and of a different character. He was examined at different times over a period of nine months; on some occasions there was no murmur at all at the base, and a limitation of the usual area was frequent, which was shown on the chest by the double contour of the areas marked.

In this case it seemed that the posterior scapular, the sub-capular, and the internal mammary arteries had taken the chief part in forming anastomoses between the arch of the aorta and the aorta in the thorax, with the effect of almost obliterating all pulse in the arteries of the lower extremities. No other effect was noted, with, perhaps, the exception of signs of high blood pressure in the renal arteries, the urine being pale and of low specific gravity, with no albumen, and he said it was customary with him to rise once or twice at night to pass water. There seemed to be no evidence, on auscultation, by which the murmurs could be assigned to arterial anastomoses solely, though one area extended down over the cartilages, beneath which an artery could be felt; on the other hand, he said he had been laid up since leaving the army, a week at a time, with severe præcordial pain, and in the fifth interspace the murmur was similar to exocardial murmurs.

This anomalous case could readily escape observation in an ordinary examination; for unless the stethoscope was placed over one of the arteries in the back, there was nothing but the fulness inside the right axilla to cause special attention. Though his heart was carefully examined for some days after admission, it was the fulness and slightly diminished resonance being investigated that called attention to the anastomoses.—*Brit. Med. Jour.*, August 4, 1888.

TREATMENT OF FRACTURE OF THE PATELLA BY SUTURE.—DR. A. R. JENKINS, of Henderson, Ky., proposes to put the skin on the greatest stretch and to cut down on the fragments by a transverse incision—whether the skin be drawn up or down depending on the amount of separation of the upper fragment. Naturally the incision would be made above if there was much retraction; or if there be much contusion of tissue on or below the bone, the incision is made above in the sound tissue. Through either of these openings the fragments could be freed alternately, and inspected, then sawn, drilled or sutured as might be; or an hæmarthron or fluids could here be removed from the joint, the capsular ligament sewn, etc. An assistant, in the meantime, keeps

the skin stretched as necessary, either with fingers, retractors, or Muzeaux forceps. Of course the strictest antiseptic prophylaxis and treatment should attend throughout.

In cases of compound fracture of the patella, with much destruction or pulping of the skin, it is suggested that the doubtful tissue be excised, and that the sound skin be drawn over the fragments. Compensation for the resected skin could be obtained by incising a large Y or an arc above or below the resection wound and far enough removed to be safe, the concavity of the arc or the fork of the Y looking towards the wound, or by a tenotomy of the tensor vaginae femoris muscle.

Furthermore, it can be said for this method that it would allow of the extra-articular methods of suture, as employed by Volkmann and Riedel, or the intra-articular fastening of Kocher. Either of these methods could be used after the toilet of the patella was complete; all that is then necessary after the skin is relaxed, and the parts *in statu quo ante*, is to make a counter opening at the opposite end of the patella, and from these two openings the catgut or silver could be manipulated by an armed needle around or beneath the patella (subcutaneous or subpatellar). In laying the last stitches in closing the cutaneous wound as a refinement of technique, wounding of the skin could be avoided by the continuous sunken catgut stitch, thus eliminating infection through the skin appendages.

The particular claims for the method are that it admits of an almost subcutaneous exploration and operation on the diastasis and in the joint, and that it may even progress like the ideal subcutaneous wound to healing. It involves normal and less suspicious tissues. It is consistent to true plastic surgery, and to the anatomy and physiology of the parts involved. By making a proper use of the elasticity of the skin in this situation, the wound in most cases need be but small for the field of inspection and operation, owing to elasticity of the skin, can be moved from one part to another without the necessity of essentially enlarging the original cut. In this it resembles the laparotomy technique of Lawson Tait, in so far that it is an endeavor to bring the entrance operation wound to the *minimum*.—*Annals of Surg.*, September, 1888.

MERCURIC BICHLORIDE IN HYPOPYON KERATITIS AND OTHER CORNEAL DISEASES.—DR. R. H. CHILTON says:

In the application of this remedy to eyes with hypopyon, I do not think it necessary to keep the eyes in constant contact with a solution of it, but think a thorough application to the eyeball, by inversion of the lid, two or three times a day by the physician, then direct the patient to use it every three hours, is sufficient. The result is generally about the same—that is, to check

sloughing and suppuration within twenty-four hours. I agree with Dr. Hotz in believing the resulting cicatrix in these cases to be much less than when treated by other remedies. In all cases where sloughing has occurred to the extent of perforation, or where it is necessary to make a paracentesis, I think it is advisable to wash out the anterior chamber with a weak solution, the strength to be about 1 to 20,000. This will prevent a further invasion of the disease into the chamber, and often prevent disease of the iris from complicating the already serious trouble. Any ulcerated surface, without secretion of recent occurrence, will soon heal, and we obtain this condition perfectly by the use of mercuric bichloride.

In the treatment of a recent case of gonorrhœal ophthalmia, I was pleased, not only with its action in at once arresting the progress of a sloughing ulcer in one eye, but in aborting the disease in the other. In the latter, the treatment was begun before the disease had involved the whole of the surface of the conjunctiva, yet suppuration was abundant from the lower palpebral membrane. The disease succumbed in three or four days. In the sloughing eye the disease never progressed after the first twelve hours, and the suppuration was materially checked from the lids at the same time.

The use of this preparation is well borne in hypopyon keratitis; I have thought better than in eyes without ulceration. It is applicable in nearly all cases, while preparations of mercury in the form of an ointment are totally inadmissible from their irritating effect. I have never had occasion to make a paracentesis when I could get the eye fully under the influence of this drug before the accumulation of pus took place. In its application I use a $\frac{1}{2}$ per cent. solution of cocaine to modify its stimulating action. In other forms of corneal ulcer I have found it superior to other preparations of mercury. In ulcerative keratitis, phlyctenular disease, and corneal ulcer from granular inflammation, I have found it equally as beneficial as in hypopyon.—*Texas Courier-Record of Medicine*, August, 1888.

SALICYLATE OF BISMUTH, combining the astringent properties of bismuth and the disinfecting properties of salicylic acid, has been used by EHRLING in a large number of cases of digestive disturbance in children. It is an excellent remedy for gastro-intestinal catarrhs depending on abnormal fermentation, especially if it be administered in conjunction with lavage (washing out of the stomach and intestines). Ehrling uses the following formula:

| | |
|---------------------------------|------------------|
| Salicylate of bismuth | 5 j |
| Glycerine | $\frac{1}{2}$ ss |
| Water, ad. | 5iv ℥ |

S.—A drachm, more or less according to age, every two hours.—*Archiv für Kinderheilkunde*, Bd. ix, S. 90.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5 00
SINGLE COPIES.....10 CENTS

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 22, 1888.

CLASSIFICATION OF DISEASES BY COMPARATIVE NOSOLOGY.

It was in every way appropriate that the admirable address of Dr. Gairdner before the British Medical Association should have been followed by the Address in Medicine of DR. T. CLIFFORD ALLBUTT, on "The Classification of Diseases by Means of Comparative Nosology." Reading this after the address of Dr. Gairdner, one is inclined to think at times that Dr. Allbutt's address is a first chapter after Dr. Gairdner's masterly introduction—a rather special application of the general principles laid down in the President's Address. It was such an address as could be written only by a physician-naturalist—a *Naturforscher*. The keystone may be said to be evolution—as applied to disease, and one who reads it will do well to read Mr. Pittfield Mitchell's recent work on "Dissolution and Evolution and the Science of Medicine."

What is meant by "the classification of diseases by means of comparative nosology?" To classify things is to think of them in groups, these groups being in such order as best conduces to the ascertainment and remembrance of their laws. Scientific classification, then, must be founded on a natural method and on natural affinities, and must be the expression of them. We are all familiar with chemical classification, the groups and series, which may be regarded as the simplest classification of substances apparently unlike in

some or many particulars. Passing to the animal world, who, in making an artificial and unscientific classification, would place the kangaroo and the opossum in the same class, and who, in the same classification, would not class together the flying-squirrel and the flying-squirrel-like marsupial of New South Wales? "A scientific classification," said Dr. Allbutt more than twenty years ago, "disregards the obvious as such, and may place together objects at first sight distant and disparate." We should not think of diseases as isolated disturbances, but that many of them are phases of certain periods of bodily development.

In his article on the "Classification of Disease," in the second volume of *Guy's Hospital Report*, Dr. Allbutt said: Life consists of a series of processes which together constitute varieties or modes of growth, that is, health, scrofula, syphilis, rheumatism, gout, rickets, tuberculosis, etc. Diseases, taken severally, are often members of such series, which series may be constructed by a survey, not only of the individual, but of his collateral kin and of his ancestry, and also of other orders of the animal and vegetable world, a survey which cannot be made until comparative nosology becomes a recognized branch of our science." And again, in an address in 1882, Dr. Allbutt said: "To find new arms against disease, we must have a truer conception than we mostly have of the genesis of disease. No mere enumeration of symptoms or of pathological detail will suffice for this, nor even a full description of diseases severally. We have to work out the genetic affinities of diseases, their origins, parent stems, and alliances, as well as their issues. We can have no complete therapeutics until the science of comparative nosology is in a great measure constructed—a science as yet scarcely begun." Thus we see that the address now under discussion is the outgrowth of almost a quarter of a century of thought. In this time something has been done in the ways he indicates. About a quarter of a century ago, in 1864, Dr. Laycock showed that some basis of organic classification of disease was to be sought in a comparison of diseases as they originate in the several layers of the embryo, and his suggestion has thrown a great deal of light upon the kinship and genesis of neoplasms. Veterinary science has given and will give new light, but it will advance us only a step. In human nosology but little remains, and when we shall

have all that veterinary nosology can give we will have but two links in the zoocentric or biocentric chain. Perhaps to complete it we must wait patiently for some Darwin, "a machine for grinding general laws out of large collections of facts."

"Perhaps," says Dr. Laycock, "no morbid change happens to man which is not a normal process in other organisms, and the nature of which may be known by a study of such analogous normal changes." An example of this, says Dr. Allbutt, is the shedding antler of the deer, which is a huge sequestrum, a case of normal necrosis. We are in the position, he says, of anatomists before the time of Cuvier and von Baer. A minute clinical study of human nosology has been made, but the parts into which disease has been dissected are not the elements out of which it has grown. Nearly all remains to be done in tracing the homologies of disease throughout the animal and vegetable world. Its phenomena must be studied under the various and simpler conditions of lower organisms, and its development traced upwards through the *macrocosm* of all life and through the *microcosm* of the embryo. Its variations through space and under changed climatic conditions must be studied, and the effects of change of function upon change of structure must be noted as these changes pass, by hereditary transmission, from the dynamic to the static form, tabulating pathological sequences in family, race or country, so as to detect the latent affinities of diseases apparently not related. As an introductory to this study may be recommended Quatrefages' work on "The Human Species."

Dr. Allbutt then describes the four methods, the *hereditary*, the *historical*, the *geographical* and the *experimental*, that must be pursued in order to attain to a true system of classification of diseases of men, animals, and plants, on a basis of affinity. These methods must be pursued at the same time; they cannot be logically dissociated. We are, as it were, scarcely at the threshold of any one of these methods, as Clodd says of the significance of the doctrine of heredity. How little does any one of us know of his family history, even in the male line, for a comparatively short time, and how infinitely small the knowledge of the vast expansion backwards of the family tree. Yet for complete knowledge the hereditary nosology of a whole nation is inadequate; we must go

with our inquiries into the diseases of all living things. As in all studies, the historical method in nosology leads to the philosophical, and here we may be said to be in the glacial period of our knowledge. How do changes of function become, in generations, changes of structure, variations into less useful or "morbid" function, and this soonest in the highest and least organized parts, the nervous system, the adapter and organizer? We know only the fact, not the *how* and *why*.

And after having carefully studied, so far as we can, the heredity and history of disease, and turn to the geographical method for information, we are brought face to face with the question, How have the morbid varieties of *man* arisen? For the answer to this, which is only a part of the question, How have the morbid varieties of living things arisen? we must seek the answer in the past. We must work in areas long undisturbed, says Dr. Allbutt, and must register in these the phenomena of morbid variation with the qualities of soil, aspect, seasons, atmosphere, food products, and so forth. Nations must not be confounded with races, nor kingdoms with physiological areas. Said Boudin: "As every country has its characteristic vegetable kingdom and animal kingdom, so it has its pathological kingdom." As illustrating the fact that no one of the methods of classification spoken of can be relied upon for complete nosological data, may be mentioned malformations of the jaws, which are becoming more common in America, especially in those portions of the continent peopled by several different races. And to show the value of comparative nosology, in clearing up this one matter we must get a part of the answer from the *niata* cattle of South America; a part from certain sheep of Central Asia, which have, normally, *steatopygia*; a part from the difference between the head of the domestic pig and the wild boar, and so on until the whole world has been sought over; and even then human craniology must be studied to complete the evidence.

Finally, with the other methods, there is the experimental. Like the other methods, the experimental shows that clinical types cannot be a basis of nosological classification. The work being done in experimental medicine is increasing, and is certainly productive of interesting results. Pharmacological experiment has shown that poisons vary in their clinical effects by leaps and bounds,

as musical flames respond to scales of vibration; that poisoning by extractives in general is attended by hyperthermia, and poisoning by animal alkaloids by hypothermia; that the distinctive action of the lower members of the fatty series is their stimulant and anæsthetic action on the nerve centres, and that the members of the aromatic series affect the nervous system, but the motor more than the sensory centres. With curare we may reduce the mammal to a cold-blooded animal, whose temperature varies with the atmosphere. Space does not permit the further pursuance of this subject.

HOW THE OPIUM HABIT IS ACQUIRED.

MR. VIRGIL G. EATON tells the public, in the September number of the *Popular Science Monthly*, how the opium habit is acquired. He is the writer that frightened the people of the country about two years ago by prophesying that they would all be bald in about a dozen centuries. He now predicts that unless people develop their muscles, rest their nerves, and send the family doctor on a vacation, the residents of our American cities will be all opium-slaves.

For the past year or more Mr. Eaton has "studied the growth of the opium-habit in Boston." He says it is increasing rapidly, and from the "tell-tale pallor" of the faces he sees he is sure the habit is claiming more slaves every day. In order to approximate to the amount of opium in its various forms used in Boston, Mr. Eaton "made a thorough scrutiny of the physicians' recipes left at the drug-stores to be filled." This is the way that one would expect an unscientific and unthinking man to make such an investigation. Having set out to find a thing, he finds it—and is duly surprised. He says he found opium and its alkaloids used by physicians for every ailment that the flesh is heir to, and then he enumerates a list of affections for which he learned they are used. It is pertinent to inquire whether Boston physicians are in the habit of writing out a diagnosis on each prescription. One would infer as much from Mr. Eaton's article. From his investigations as to the number of prescriptions containing morphine, and the number of these refilled, he is satisfied that it was the opiate qualities of the medicine that caused the renewal. As regards the proportion of

opium habitués that begin by taking medicines containing opiates, he places it as fully 25 per cent.—perhaps more. This is only one in four, on his own estimate. Then, within the space of a page he says: "The parties who are responsible for the increase of the habit are the physicians who give the prescriptions." Now if only one opium habitué in four acquired his habit from medicines ordered by a physician, the other three must have acquired it in some other way, not attributable to the act of a physician. How, then, can the physician be responsible for the increase of the habit, even admitting that they are responsible for one case in four?

Mr. Eaton also tells how physicians prescribe opium. "In these days of great mental strain, when men take their business home with them and think of it from waking to sleeping, the nerves are the first to feel the effects of over-work. Opium effects immediate relief, and the doctors, knowing this, and wishing to stand well with their patients, prescribe it more and more. Their design is to effect a cure." This arrant nonsense in the *Popular Science Monthly*! Mr. Eaton says that two means of preventing the spread of the habit suggest themselves to every thoughtful person: The *first* is to pass a law that no prescription containing opium or its preparations can be filled more than once without having the physician renew it. If this and the registration safeguards were not enough, Mr. Eaton suggests that physicians could be fined for administering opiates save in exceptional cases. The *second*, is to keep the body in such a state that it will not require sedatives or stimulants. People, he says, should forsake medicine and take to the gymnasium, and thus the family doctor, who means well, but cannot resist the tendencies of the age, can take a protracted vacation. All of which is doubtless well meant.

Had Mr. Eaton taken the trouble or known how to make more careful investigation of the subject about which he has succeeded in confusing himself, he would have consulted some of the back numbers of the *Boston Journal of Health*, with the assistance of which he might have written an article at once sensible and interesting. Had he stopped to consider that one-fourth of a class is less than three-fourths, he would not have written an article that can have no other effect than to mislead the public. He but barely men-

tions the fact that the proprietary or "patent" medicines that have the largest sales are "those containing opiates." He also mentions that opium joints and opium-smoking are on the increase. He says nothing of the fact that "nervines," and such compounds as "Scotch Oats Essence" contain opium, and probably he does not know that of the twenty or more varieties of "opium cures" made and for sale in this country, *all contain opium* except one, as shown by the analyses of Dr. B. F. Davenport, of Mr. Eaton's own City—Boston. Mr. Eaton takes no account of the fact that the "patent" medicines of the worst grade are the most popular, and their popularity depends on the amount of alcohol or morphine they contain.

Mr. Eaton's paper reminds one of the assertion that a large proportion of habitual and occasional inebriates owe their disease to the alcohol that physicians have prescribed. This assertion has been recently made by a prominent clergyman, whose name may be found among the endorsers of a "patent" compound that contains more alcohol than pure sherry. He thunders from the pulpits against the use of alcoholic liquors in any and every form, and writes an endorsement for a "pure, non-alcoholic tonic" that contains 29 per cent. of alcohol. Totally blinded by the beam in his own eye, he lectures his brethren on the motes in their eyes. The medical profession, we have no doubt, will endorse Mr. Eaton's proposition to fine physicians for prescribing opium when it is not needed, if he will accept an amendment: Fine druggists and others that sell "patent" medicines containing opium or its preparations or alcohol, or any substance dangerous to health or of no value in the treatment of disease, or that are not worth their price; and incarcerate the manufacturers in State's prison for not less than five years, along with the people that endorse their preparations, knowing nothing of them. This done, Mr. Eaton will probably find that physicians are not responsible for the increase of the opium-habit.

INTUBATION AND DEGLUTITION.

It is well known to all who have given attention to the subject, that one of the greatest difficulties attending intubation of the larynx as a substitute for tracheotomy, is the tendency of food

and drink to enter the larynx through the tube, rendering it, in some cases, impracticable to administer sufficient nourishment to sustain the patient. At the regular meeting of the Chicago Medical Society, September 3, 1888, Professor Wm. E. Casselberry read a short paper embracing an account of three cases of intubation of the larynx that had come under his observation, in which he had succeeded in administering water, milk, and other liquid nourishment abundantly, by simply placing the patient in the dorsal position, with the head and shoulders inclined downwards at least sixty degrees, and letting them take the liquid through a tube. While inclined in that position, the patients swallowed with ease and without the slightest tendency to pass any part of the liquid into the larynx. His first case was attended with Dr. Frank Carey about June 1, 1888. Since hearing of the good results obtained in this case, several other members of the Society had tried the same method with equal success. In none of the cases thus far reported, has the great inclination of the head and shoulders downward, created any tendency to displace the tube, or to cause undue congestion of the vessels of the brain. Professor Casselberry stated, in closing the discussion, that the patient should not be raised to a horizontal or upright position too quick after stopping the food or drink lest there might be remaining in the mouth or fauces enough to gravitate through the tube in the larynx and occasion coughing at once. He said to obviate this it was necessary to induce the patient to perform the act of deglutition two or three times after taking away the nourishment or drink and before allowing the head to be elevated.

YELLOW FEVER IN FLORIDA.

The yellow fever that manifested itself to a limited extent in two or three places in Florida last year, has renewed its invasion the present season, and assumed an important epidemic form in Jacksonville and some smaller places. The whole number of cases reported as having occurred in Jacksonville to this date, September 17, is 1047, and the number of deaths, 133, which indicates a mild type of the disease. Liberal contributions are being made in aid of the suffering communities; and this should be continued, especially by the people of the North, until the

plague ceases. If the Health Boards and afflicted municipalities are supplied with sufficient means, not only provisions, but plenty of nurses and doctors can be had from the South, who are already acclimated and familiar with the scourge. But experience has abundantly demonstrated that such nurses and doctors as go from the North wholly unacclimated, directly into the fever locality, almost certainly speedily succumb to the disease, and thereby become an additional burden instead of a help to the afflicted communities.

EDITORIAL NOTES.

A CONGRESS of Polish medical men and scientists was held recently at Lemberg. About 500 members were present.

ALUM IN FURUNCLES OF THE EAR.—Grash reports good results from alum solutions in furuncles in and about the ear.

RAILWAY SANITARY INSPECTION.—Those interested in this field will do well to read the paper of DR. R. HARVEY REED, of Mansfield, Ohio, on "The Sanitary Inspection of Passenger Coaches," read at the Ninth International Congress, and now reprinted in a brochure.

LEAD-POISONING has become less frequent in the Department of the Seine, the hygienic measures enforced for several years having diminished the number of cases. The Committee on Public Hygiene recommend that powdered white lead be replaced by white lead mixed with oil, which is not dangerous.

ABSENCE OF BOTH MAMMÆ in a female, aged 21 years, is recorded by DR. W. WYLIE, of Skipton, England. A small mole exists near where the right nipple should be found, and the pectoral muscle seems to be quite bare of adipose tissue in that region. Some three months ago the woman gave birth to a child, and there has been no sympathetic pain nor uneasiness of any kind in the pectoral region.

MEASURES AGAINST SMALLPOX.—The Comité Consultif d'Hygiène Publique de France, after hearing the report of Dr. Roux in regard to the epidemic in the Department of Morbihan, made the following recommendations: Isolation of patients; disinfection of linen, mattresses, and

clothes by means of portable steam stoves; the use of sulphuric acid and antiseptic sprays in the dwellings; vaccination of all the inhabitants with animal vaccine; and special instruction promulgated by means of cards.

SPECIALISM IN FRANCE.—The Council of the Faculty of Medicine of Paris has approved the report of Dr. Damaschino, who urges that three *agrégés* (assistant professors) out of five should be required to take up specialties immediately on their *agrégation*, and thus official sanction has been given to specialties, in France at least. The specialties to be chosen comprise ophthalmology, experimental and comparative pathology, hygiene, forensic medicine, mental diseases, and cutaneous diseases and syphilitic disorders. Therapeutics, nervous diseases, and diseases of children will be added to the list subsequently.

SUIT AGAINST DR. VANDERPOELE.—Dr. Samuel C. Vanderpoele, Jr., of New York, has a singular lawsuit against him. Three weeks ago he diagnosed the illness of a little daughter of Charles Dawson, of Syracuse, N. Y., who was spending some time with his family at the Larkins House, Watch Hill, L. I., as scarlet fever. Mr. Larkins, the proprietor, relying on the diagnosis of another physician, denied that the child was suffering from the disease, and the Dawson family remained at the hotel. The other guests, hearing of Dr. Vanderpoele's diagnosis, left the place. Mr. Larkins immediately brought suit in Rhode Island against Dr. Vanderpoele for \$12,000 damages. Dr. Vanderpoele says that his diagnosis was correct and that he has been sustained by the Board of Health of Westerly, R. I., and some prominent physicians. Dr. Vanderpoele intends fighting the suit. He says he was subjected to great personal inconvenience by the action of Mr. Larkins, who, as soon as he brought the suit, had an order issued for Dr. Vanderpoele's arrest. The Sheriff arrived at the Watch Hill House, a rival establishment, where the physician was staying, and proceeded to execute the order. Bail was fixed at a large figure, but several of the cottagers offered at once to go on the doctor's bond. The Sheriff, however, Dr. Vanderpoele says, made paltry objections to each of them, and stated that he intended to lock the doctor up, but satisfactory bail was finally furnished. Dr. Vanderpoele says he will in turn sue the hotel man for damages.

SOCIETY PROCEEDINGS.

Congress of American Physicians and Surgeons.

THE PRESIDENT'S ADDRESS.

Delivered at Washington, D. C., September 20, 1888.

ON MEDICAL MUSEUMS, WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM AT WASHINGTON.

BY JOHN S. BILLINGS, M.D.,

SURGEON, U. S. A.

Through the kindness of Dr. J. S. Billings, we have received an advanced copy of his Address. After some introductory paragraphs he speaks of the origin of Museums as follows :

The origin of collections of objects of natural history was possibly, as suggested by Beckman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections, specially connected with anatomy or medicine before the sixteenth century. It is true that the human anatomy had been introduced into the schools by Mundinus in 1306, and that do doubt in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.¹

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leeuwenhoek and Ruysch, gave a powerful stimulus to formations of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

¹For accounts of the collections formed between the days of King Solomon, and the end of the seventeenth century, consult tome ii of the *Musei Museumum* of Michael Bernhard Valentin, in folio, published at Frankfort in 1714, wherein are curious engravings of many of the wonders contained in these museums. See, also, Hagen (H. A.), *The history of the origin and development of museums*, (American Naturalist, 1876, x, p. 80.

²The first use of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zambo, who lived in the latter part of the seventeenth century, and who had been accustomed to make wax models of diseased or deformed hands, feet,

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana, at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate, and of little scientific value.²

During the first half of the present century a number of private collections were formed by anatomists, pathologists and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence, at the present time, any large collection of specimens pertaining to human pathology which is the property of an individual, and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston or others. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology and pathology, have led to the creation of medical museums in all parts of the civilized world. In most of the Continental capitals, these are connected with universities supported by the State. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the State in different countries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying, or in obtaining replies, to somewhat troublesome inquiries, I cannot sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you.³ Evidently the city having the most valuable aggregate of anatomical and pathological specimens at the present time, is London, which contains the collections of the Royal College of Surgeons, of St. Thomas', Guy's, St. Bartholomew's, St. George's and of other hospitals, and of University College, the College of Physicians and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1826, had a room set apart for the purpose under

etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest, and to get him to model some pathological specimens which he furnished. A Franciscan, named Desrones, brought this art to France, and made many such models between the years 1703-1706. It and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and a diseased liver, which were to be seen in Innsbruck in 1766. (Percy et Laurent, in *Dict. des Sci. Méd.*, Paris, 1818, vol. xxxv, article "Museum.")

³See appendix.

the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but, in another sense, it is truly such, since the College may be looked upon as the agent of the government, having special charge of matters connected with medical education, as it is the principal examining body for those proposing to practice surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is preëminent in illustrations of human morphology and its abnormalities. The museums of the great hospital medical schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course, a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago, viz: "*An pro distinctis agris agritudines diversæ?*" is one that often occurs to a curator as he examines new specimens which differ but little from those already in his collection, but which do differ in some respects, and with regard to which he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.⁴ In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren, devoted to pathological anatomy, and the Musée Orfila, devoted to human and comparative anatomy, materia medica, natural history and instruments and apparatus.

Professor Leon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in concours opened for positions connected with the anatomical teaching of the faculty—such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

⁴I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums with the request that they might be answered.

The medical museums of other European countries are connected as a rule with universities, and it is to be remembered that in the case of the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and therefore, each his own museum; and unless this fact be held in view, comparisons between Continental and English, or American, medical collections may give very erroneous results.

So far as mere number of specimens is concerned our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army Medical Museum, owes its inception to Dr. Wm. A. Hammond, one of whose first acts after becoming Surgeon-General, 1862, was to issue a circular stating that "as it is proposed to establish in Washington an Army Medical Museum, medical officers are directed diligently to collect and to forward to the office of the Surgeon-General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine and surgery."⁵ By the end of the year over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the first of July last contained over 15,000 specimens, besides those contained in its microscopical department, divided as follows:

| | |
|-------------------------------------|--------|
| Comparative Anatomy | 1,689 |
| Pathological | 8,351 |
| Medals | 381 |
| Microscopical specimens | 10,416 |
| Normal Human Anatomy | 2,961 |
| Instruments and Apparatus | 814 |
| Microscopes | 141 |
| Miscellaneous | 835 |

Besides these there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged; and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a National Medical Museum, arranged to meet the

⁵Circular No. 2, Surgeon-General's Office, Washington, D. C., May 21, 1862.

wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

After commenting somewhat in detail upon the ways and means for making the museum what it should be the author continues as follows :

One of the most important sections of our museum is that devoted to microscopy, including normal and pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless ; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultures of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis, or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens ; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well pleased, would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent ; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published ; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods.

We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia and Washington could be brought together, a very much better average presentation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically bring these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London arrangements have been made to have such an anthropometric laboratory in an outbuilding at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton, any person can have the regular series of measurements and tests made upon himself for the charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data which such observations systematically carried on for a series of years would be so valuable, not only from a scientific point of view, but for practical purposes in connection with life insurance interests, and very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians having the confidence of the profession, where not only normal but abnormal conditions can be determined ; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already es-

established reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our National Medical Museum should be to show methods of research and of instruction for the benefit of the investigators and the teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultures on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation, as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

The objects of a medical museum are to preserve, to diffuse and to increase knowledge. Its conservative function is to form a permanent record of what has been demonstrated, and to fix the meaning of terms. Even in my brief experience of thirty years the terminology of anatomy, physiology, pathology, chemistry and of most of the specialties has greatly changed, and this not only by addition of new terms, but by the dropping of old ones. To get useful results from the older literature we must know the precise significance of the old words, and, in some cases, the best way to learn this is to examine the specimens prepared by those who used such terms in their descriptions. The specimens in our museum which came from the collections of Professor William Gibson and Dr. Frank Hastings Hamilton are especially valuable, because they were the basis of practical teachings, and should be examined by any one criticising these teachings.

A large proportion of the pathological specimens in this museum illustrate conditions which now rarely occur, forming a group which it is safe to predict will never be duplicated. It is not only that they were gathered during a great war, but that they illustrate the results obtained when antiseptic surgery, as now understood and practiced, was unknown. Never again, I hope will there be brought together such a collection of the effects of pyogenic microorganisms on gunshot

wounds, especially of bone, as may be seen in its cases.

The museum also preserves, for future investigations, objects whose nature or relation are not understood at the time when they are received, and which occur so rarely that the means of studying them by comparison can only be obtained through such preservation.

Upon the function of a museum as a diffuser of knowledge—as a means of education; it is needless to dwell. That it should also strive to increase knowledge is equally certain. This is to be effected by study and comparison of its materials. The results of such study and comparison of a part of the Army Medical Museum collection have appeared in the volumes of the *Medical and Surgical History of the War*. Another part will, I hope, soon be utilized in a study of its collection of human skeletons and crania which has been commenced by Dr. Matthews, of the Army. But a considerable part is as yet only in the stage of agglomeration, and our present business is to collect and preserve, leaving to the future its full utilization.

A medical museum is really used, for purposes of study, by very few persons; but through the teaching of those few its lessons are made known to the whole profession. American physicians in investigating a subject do not, as a rule, think of inquiring as to what museums can show with regard to it, simply because they have not had convenient access to large collections and are not accustomed to make use of them. Thirty years ago we were in much the same situation in respect to medical literature; but as the libraries have grown, desire for bibliographical research has grown also, and I think that in like manner when we have secured a comprehensive National Medical Museum, it will not only be made use of, but will give a powerful stimulus to the formation and progress of other more special collections elsewhere.

What should be the relation of this central National collection to those formed in different parts of the country, either in connection with medical schools, or with museums of broader scope? Certainly they should help one another, and this can be done in many ways. I do not in the least object to a generous rivalry to do the best work, to have the most instructive and artistic preparations. That is a good thing. But I would say to the anatomist of a school, when you have made a preparation which is noteworthy, offer to make a copy for the National collection, where it will be seen by the anatomists of all schools and all countries. To the pathologist of a medical school I would say, after you have secured type specimens for your own collection put aside other good specimens for the National Medical Museum, which will furnish you materials for the purpose.

On the other hand, the collections of the National Museum are available for study by any proper person, and its duplicates should be used to aid other museums which may be in special need of them.

In common with several of the largest and most important medical museums, more especially those of the Royal College of Surgeons and of the Faculty of Medicine of Paris, the Army Medical Museum has the advantage of being closely associated with a large medical library which is in the same building, and at present under the same direction. The increased utility and attractiveness which this gives to both library and museum is very decided.

I have time for only a very condensed statement of the wants of our National Medical Museum. In the first place it needs the intelligent interest and friendship of the medical profession of this country. To a very considerable extent it has had this; were it otherwise it would not be what it is, nor where it is. But it needs more of it, and it can never have too much. Every medical man in this country should help a little and provide for the perpetuation of his name as that of a physician interested in the progress of the profession by sending at least one specimen to it. It is omnivorous in its demands for material, as will be seen by the circular which it has recently issued. But I will name as special wants, human embryos, especially those of a very early age, monstrosities and malformations of all kinds in man or in the lower animals; results of old injuries, such as fractures or dislocations, or of surgical operations, such as excisions, stumps, etc.; injuries and diseases of the eye, ear and nose; new growths of all kinds; diseases of the brain and spinal cord; and specimens illustrating the condition of bones, joints, brain, larynx and other organs in extreme old age.

In the second place it needs a regular supply of funds from the general government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the museum may be always able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the Museum at present is \$5000. This is sufficient, except that the printing of the catalogue, of which I shall speak presently, must be an extra charge. . . .

The third need of the Museum is a series of the right kind of descriptions of its specimens, given on labels and in a catalogue. Unaided by such

descriptions it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprosy nodule, whose history, if we knew it, would reach back through the lazarettoes of the middle ages to the far East, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument, from the first rough iron tube of the spectacle-maker of Nuremberg to the delicate and complicated instrument through which we now peer curiously into that world which lies within the world of unassisted vision. By our labors and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached, means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ, would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact handbooks relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three volumes, each the size of one of the volumes of *The Medical and Surgical History of the War of the Rebellion*.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skilful that he can find no instruction there, and no one is so ignorant that he cannot comprehend some of the lessons which it teaches. Taken together these institutions should contribute in no small degree to our National prestige, for which eminence in scientific work and teaching is an essential element, and if it be remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the Army Medical Department, and for the dead as well as for the living who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunity, to make the museum and library such as a great profession and a great nation have a right to demand. Appended to the address are tables enumerating the principal medical museums both in Europe and this country. We have only space for the table giving those in the United States, as follows:

| LOCALITY AND NAME OF MUSEUM. | Total number of specimens. | NUMBER OF SPECIMENS IN EACH DEPARTMENT. | | | | | | Number of specimens of plants and animals. | Number of specimens of minerals. | Number of specimens of fossils. | Number of specimens of geological specimens. | Number of specimens of other specimens. |
|---|----------------------------|---|---------------------------|-------------|------------|----------------|---------|--|----------------------------------|---------------------------------|--|---|
| | | Comparative anatomy. | Physiology and pathology. | Embryology. | Pathology. | Microscopical. | Botany. | | | | | |
| Albany: Medical College Museum. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Boston: Warren Anatomical Museum, Harvard University. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Chicago: Museum. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Cincinnati: Museum of Hospital and Pathological Dep't of Cincinnati University. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Louisville: Medical Department University of Louisville Museum. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| New Orleans: Museum of Tulane University. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| New York: Pathological Cabinet of N. Y. Hospital. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Museum of Medical Dep't University of New York. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Wood Museum, Bellevue Hospital. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Philadelphia: Mütter Museum, College of Physicians. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Wistar and Horner Museum, University of Penna. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Jefferson College Museum. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| Washington: Army Medical Museum. | 1,200 | 200 | 100 | 20 | 100 | 20 | | | | | | |
| | 14,700 | 1,000 | 500 | 100 | 1,000 | 200 | | | | | | |

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM AN OCCASIONAL CORRESPONDENT.)

Dr. William Murrell's Work on Chronic Bronchitis—Medical Advertising in London—Report on the late Emperor Frederick's Case—The next Congress at Washington and Medical Honors—The Father of the American Medical Association.

Dr. William Murrell, of the Westminster Hospital, London, is engaged in the preparation of a work on chronic bronchitis and its treatment, a complaint which is very prevalent here, and to which the Doctor has paid much attention. He is still a firm believer in the efficacy of ipecacuanha spray introduced by him and Prof. Ringer, in 1874. The ordinary ipecacuanha wine is used, either pure or variously diluted, according to the severity of the symptoms. The inhalation is performed once or twice a day and its duration rarely exceeds twenty minutes. The apparatus employed is a common hand-ball spray, or one worked by steam, which is a modification of Siegle's. Certain precautions are taken, which although apparently trivial, are not without importance in the attainment of a successful result. The patient is taught to inspire deeply so as to bring the spray in direct contact with the irritated mucous membrane of the bronchial tubes. If he should exhibit a tendency to involuntarily arch his tongue up against the roof of the mouth he is told to protrude it so as not to obstruct the entrance of the atomized fluid into the air passages.

Any fluid which may accumulate in the mouth he is directed to spit out as it is found by experience that if swallowed it is apt to give rise to nausea, and even vomiting. A course of treatment lasts from three weeks to a month, and even if the patient is not permanently cured he is usually relieved of his cough, the shortness of breath and other distressing symptoms soon disappear. In very obstinate cases Dr. Murrell employs in addition "Burrongs' Chloride of Ammonium Inhaler," a little acetic acid colored with tincture of litmus being added to the water in the wash bottle, to cut off any free ammonia and prevent the occurrence of spasmodic cough and bronchial irritation, which when this is neglected is sometimes caused. In suitable cases certain essential oils dropped on absorbent cotton-wool are added to the water and are volatilized with the fumes. The drugs best adapted for this purpose are pure terebine, pinol, oil of sandal-wood, oil of lemon, and oil of cubebs. Care is taken in the selection of the appropriate remedy, and it is found that the character of the expectoration is the best guide. Tar is the best drug for internal use, and is given in the form of syrup of tar, mixed with an equal quantity of syrup of Virginia prune. It is palatable and may be taken in doses of a tablespoonful in water several times a day, in fact, the oftener the better. When the expectoration is difficult it is an advantage to add to each dose five drops of a 1 in 50 solution of hydrochlorate of apomorphine, which although in large doses an emetic, acts in small doses as an excellent expectorant. Dr. Murrell speaks favorably of the "Aromatic Oil of Tar" sold in the

what way the public is interested in sanitary matters.

In the pamphlet before us are a number of addresses, papers and discussions, by medical and laymen. Some deal with local matters—the sanitary state and needs of Albion. This discussion of particular cases and local matters is an important point in teaching sanitary matters to the people. There are also papers and addresses on special subjects of general interest, such as "Nuisances: What they are and how to prevent them," by R. A. Martin, M.D.; "Diseases incident to the Poor," by Dr. A. G. Bruce. "School Hygiene," by Hettie Warner Bradley; "Money Value of Sanitary Work," by Rev. B. A. Brown, M.D.; "Prevention of Communicable Diseases, from the Standpoint of the Health Officer," by H. D. Thompson, M.D.; "Prevention of Communicable Diseases, from the Standpoint of the Clergy," by Rev. B. S. Taylor, M.D.; the same from the standpoint of the Lawyer, by R. Loud; the same, from the standpoint of the State Board of Health, by Dr. Henry B. Baker.

If one wishes "good literature" for the people, it can be had from the Michigan State Board of Health.

We omitted to mention the address of the President of the Convention, Rev. Z. R. Fiske, D.D., LL.D., on "Sanitation from the Standpoint of the Individual—Sanitation from the Standpoint of the State."

HYGIENE FOR BASE BALL PLAYERS. Being a brief Consideration of the Body as a Mechanism; the Art and Science of Curve Pitching; a discussion of the Causes and Treatment of the Disabilities of Players, etc. By A. H. P. LEUF, M.D., Director of Physical Education at the University of Pennsylvania and at Swarthmore College, etc. Small 8vo, paper, pages 135. Philadelphia: A. J. Reach & Co. 1888. Chicago: W. T. Keener.

Dr. Leuf is the only medical man, so far as we know, that has given any special attention to the injuries of base ball players, and what he writes is all the more valuable because he himself is an expert player. He is, we believe, one of the good curve pitchers in the country, has suffered from pitcher's sore arm, and can therefore write more intelligently of it. In America base ball has become an acknowledged occupation, and has its own special injuries and medical features. Physicians will be interested in Dr. Leuf's description and explanation of curve pitching.

A PHARMACY LAW FOR LOUISIANA.—The efforts of the pharmacists of Louisiana to secure a law in their State to regulate the practice of pharmacy have finally been successful. The last Legislature passed an act which was approved July 11, and will be in force as soon as the necessary machinery is provided.

MISCELLANEOUS.

NEW YORK STATE MEDICAL ASSOCIATION.—Programme of the Proceedings of the Fifth Annual Meeting, held at the Hotel Brunswick, Fifth Ave. and 27th St.

FIRST DAY—OCTOBER 9, 1888. MORNING SESSION, 9 O'CLOCK. ORDER OF BUSINESS.

- I. Calling the meeting to order.
- II. Announcement by the Secretary of the number of attendants from each district.
- III. Report of the Committee of Arrangements.
- IV. Address by the President.
- V. Annual Report of the Council.
- VI. Annual Report of the Treasurer.
- VII. Reports of special committees.
- VIII. Unfinished business.
- IX. New business.

A. Annual Reports of the Presidents of Branch Associations, in their numerical order, to be read by title.

B. Annual Report of the President of the New York County Medical Association, to be read by title.

"A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the first on record," by Oliver P. Hubbard, M.D., of New York Co.

"Forced Respiration: History, Apparatus, Report of six (or more) cases. Effects of, on narcotized human subjects, adaptability of, in cases of drowning or shock," by George E. Fell, M.D., of Erie Co.

"The Origin and Medical Treatment of Uric Acid Calculi of the Kidney," by William D. Garlock, M.D., of Herkimer Co.

"Railway Injuries," by Charles W. Brown, M.D., of Chemung Co.

X. Announcement by the presiding officer that the Fellows from the different districts shall appoint two members of the Nominating Committee from each district.

XI. Appointment by the President of a member at large of the Nominating Committee.

XII. Reading and adoption of the minutes of the session.

XIII. Adjournment of the session at 12:30. During this recess of half an hour, the Fellows from the different districts shall meet to appoint the two members of the Nominating Committee from each district.

AFTERNOON SESSION, 1 O'CLOCK. DISCUSSION ON NOSOGRAPHY.

This discussion will be opened by Alfred L. Carroll, M.D., of Richmond County, with a paper in which he propounds the following questions:

Question 1. What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?

This question will be discussed by M. L. Britton, Ph.D., of New York Co., and by Simeon T. Clark, M.D., of Niagara Co.

Question 2. What are the advantages of a nosographical system based upon anatomy?

This question will be discussed by Edward G. Janeway, M.D., of New York Co., and by Frank W. Ross, M.D., of Chemung Co.

Question 3. Does a nosography based upon anatomy afford satisfactory means for the registration of clinical phenomena?

This question will be discussed by E. D. Ferguson, M.D., of Rensselaer Co., by H. D. Didama, M.D., of Oneida Co., and by Charles G. Stockton, M.D., of Erie Co.

Question 4. What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and "extrac-

tives" respectively; [a] from a bio-chemical, [b] from a clinical point of view?

This question will be discussed by Elwyn Waller, Ph.D., of New York Co., by Charles A. Doremus, M.D., of New York Co., and by Nelson B. deS. Sizer, M.D., of Kings Co.

NIGHT SESSION, 7:30 O'CLOCK.

"Hiccough, with Notes on Treatment," by Frederick W. Putnam, M.D., of Broome Co.

"Diphtheritic Paralysis." "The Treatment of Diphtheria," by J. Lewis Smith, M.D., of New York Co.

"A Case of supposed Partial Twist of the Intestines," by George E. McDonald, M.D., of Schenectady Co.

"A New Treatment of Pneumonia," by Godfrey R. Martine, M.D., of Warren Co.

"Rheumatoid Arthritis," by E. J. Chapin Minard, M.D., of Kings Co.

"The Use and Abuse of the Forceps in Obstetrics," by John P. Garrish, M.D., of New York Co.

SECOND DAY—MORNING SESSION, 9 O'CLOCK.

Address on Surgery, by William H. Carmalt, M.D., of Connecticut.

"Ocular Palsies," by Alvin A. Hubbell, M.D., of Erie Co.

"Heredity in certain Classes of Cases of Chronic Diffuse Nephritis," by B. A. Church, M.D., of Otsego Co.

AFTERNOON SESSION, 1 O'CLOCK.

Discussion on Tumors. General consideration of Tumors from a surgical point of view.

This discussion will be opened by John W. S. Gouley, M.D., of New York County, with a paper propounding the following questions:

Question 1. What are neoplasms, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?

Question 2. What are the advantages of naming and arranging the neoplasms in accordance with their histogenesis?

Question 3. What is the value of the anatomical basis to the clinician when the question of malignancy arises?

Question 4. What are the objections to the grouping of neoplasms in accordance with benignity and malignity?

These questions will be discussed by Hermann M. Biggs, M.D., of New York Co.

Question 5. What constitutes malignity, histologically and clinically?

Question 6. What is the mechanism of the necrotic process which so often occurs in certain neoplasms?

These questions will be discussed by Charles B. Nancrede, M.D., of Pennsylvania, who will also discuss Questions 4 and 13, and by Nathan Jacobson, M.D., of Onondaga Co., who will also discuss Question 13.

Question 7. What is the rationale of the recurrence of excised neoplasms in distant parts or in the viscera?

Question 8. What is the explanation of the tendency in certain neoplasms to involve secondarily neighboring lymphatic ganglia?

These questions will be discussed by Joseph D. Bryant, M.D., of New York Co., who will also discuss Question 13, by Uri C. Lynde, M.D., of Erie Co., who will also discuss Question 13, and by Leroy J. Brooks, M.D., of Chango Co., who will also discuss Question 13.

Question 9. What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasm?

Question 10. What are the indications and contraindications of the excision of neoplasms?

These questions will be discussed by Frederic S. Dennis, M.D., of New York Co., who will also discuss Question 13.

Question 11. What is the average duration of life from the time of the appearance of a malignant neoplasm which has not been treated?

Question 12. To what extent does the excision of malignant neoplasms prolong life?

These questions will be discussed by William T. Porter, M.D., of New York Co., who will also discuss Question 13, by Charles W. Browne, M.D., of Chemung Co., who will also discuss Question 13, and by E. M. Moore, M.D., of Monroe Co., who will also discuss Question 13.

Question 13. Are malignant neoplasms ever cured?

This question will be discussed by Charles T. Porter, M.D., of Illinois, who will also discuss Question 12, by William H. Carmalt, M.D., of Connecticut, by Stephen Smith, M.D., of New York Co., and by William S. Termaine, M.D., of Erie Co., who will also discuss Questions 10 and 12.

NIGHT SESSION, 7:30 O'CLOCK.

Discussion on Tumors, continued.

THIRD DAY, OCTOBER 11—MORNING SESSION, 9 O'CLOCK.

Address on Medicine. "Medical New York in 1888," by John Shrady, M.D., of New York Co.

"Mechanism of Posthumous or Post-mortem Inversion of the Uterus," by Isaac E. Taylor, M.D., of New York Co.

Address on Obstetrics, by George Tucker Harrison, M.D., of New York Co.

AFTERNOON SESSION, 1 O'CLOCK.

Discussion on Puerperal Septicemia.

This discussion will be opened by Carlton C. Frohman, M.D., of Erie Co., with a paper in which the following questions are propounded:

Question 1. What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of microorganisms?

This question will be discussed by Hermann M. Biggs, M.D., of New York Co.

Question 2. Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?

These questions will be discussed by Everard D. Ferguson, M.D., of Rensselaer Co., and by S. B. Wylie McLeod, M.D., of New York Co.

Question 3. What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions and complications, that may be relied upon as prophylactic to puerperal septicæmia?

These questions will be discussed by Frank W. Ross, M.D., of Chemung Co., and John Shrady, M.D., of New York Co.

Question 4. Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?

These questions will be discussed by William H. Robb, M.D., of Montgomery Co.

Question 5. What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?

These questions will be discussed by Frank Grauer, M.D., of New York Co.

Question 6. What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal, and when intra-uterine?

When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used, in addition to the local antiseptic measures? To what extent should alcoholic stimulants and anti-pyretics be used?

These questions will be discussed by William T. Lusk, M.D., of New York Co., and Rollin L. Banta, M.D., of Erie Co.

Question 7. What sequelæ of puerperal septicaemia tend to impair the subsequent health of the woman in case of her recovery? To what extent do chronic diseases of the pelvic organs owe their origin to puerperal septicaemia?

These questions will be discussed by John G. Orton, M.D., of Broome Co.

NIGHT SESSION, 7:30 O'CLOCK.

Discussion on Puerperal Septicaemia, continued.

OFFICERS AND COMMITTEE OF ARRANGEMENTS.

John Cronyn, President, E. D. Ferguson, Secretary, *Ex-officio Members of the Committee.*

Glover C. Arnold, Chairman.

C. Ellery Denison, Secretary.

E. S. F. Arnold, Alfred L. Carroll, John W. S. Gouley, Frank Grauer, John H. Hinton, Charles A. Leale, J. R. MacGregor, S. B. Wylie McLeod, Augustus D. Ruggles, John Shrady, E. H. Squibb, Isaac E. Taylor, John G. Truax, William T. White.

A STEP NEARER.—We learn that at the last meeting of the American Medical Association, an amendment to the constitution of that body was presented providing for the formation of a Section on Pharmacy and Materia Medica. The proposed amendment provides that the Section shall be organized in the same manner as the recently established Dental Section, and that reputable pharmacists may be sent as delegates by the various State pharmaceutical associations. Under the rules, the amendment lies over for action at the next annual meeting.

Our readers will remember the plea made for this movement by Dr. Cutter, and the supposed difficulties of its accomplishment, which were discussed in our columns soon after the appearance of the doctor's proposal. Notwithstanding the supposed ethical complication which was mentioned in this discussion, we hear that the prospects of the establishment of such a Section are good; if the physicians are really desirous of effecting a union with their pharmaceutical brethren, they will find a way of overcoming any such difficulties.

We hope to see the step now taken result, in due time, in establishing a relation between the two professions which cannot fail to be beneficial to both.—*The Druggists Circular and Chemical Gazette*, September, 1888.

SECRETARIES OF STATE MEDICAL SOCIETIES, prominent district and city societies, that wish to exchange, or are now exchanging their publications with those of the Nebraska State Medical Society, are asked to notify the Secretary, Dr. A. S. v. Mansfelde, Ashland, Neb., when the "Omaha Clinic," containing the proceedings of the Society, will be promptly mailed to them.

REMARKABLE FECUNDITY.—Mrs. Norman, the wife of a painter living at Fratton, Portsmouth, is reported to have given birth to four children—three boys and a girl—of whom only the girl survives. Mrs. Norman, who is about 40 years of age, is said to be the mother of twenty-one children, of whom nine are living. She had previously had twins, and seven years ago triplets.—*British Med. Jour.*

MR. CHARLES TRUAX, of the well-known surgical instrument house at Chicago, was granted sufficient time at the recent meeting of the British Medical Association to enable him to explain the merits of the Allen Surgical Pump.

THE RIGI BRAND OF CONDENSED MILK has been condemned by the Board of Health, New York City, on an official analysis showing a deficiency of from 5 to 9 per cent. of fat as compared with pure condensed milk; and all of said brand found in the city has been ordered to be seized.—*Boston Journal of Health*, Sept., 1888.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 8, 1888, to September 14, 1888.

Col. Charles Page, Asst. Surgeon-General, Medical Director of the Department, will proceed to Fts. Riley and Hays, Kansas, Post near Denver and Fts. Crawford, Lewis and Lyon, Col., and return, on public business. The travel enjoined is necessary for the public service. Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan. September 7, 1888. S. O. 114.

Lt.-Col. Basil Norris, Medical Director, will proceed to Ft. Klamath, inspect the medical department at the post, and upon completion thereof return to the Headquarters. Hdqrs. Dept. of the Columbia, Vancouver Bks., W. T. S. O. 103, September 3, 1888.

Major Daniel G. Caldwell, Surgeon, is granted two months' leave of absence from September 14, 1888. O. 40, A. G. O., September 10, 1888.

Capt. Fred. C. Ainsworth, Asst. Surgeon, will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army. On completion thereof will return to his station in this city, Washington, D. C. S. O. 211, A. G. O., September 11, 1888.

Capt. John M. Bauster, Asst. Surgeon U. S. Army, granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

Capt. Norton Strong, Asst. Surgeon, by direction of the acting Secretary of War, will report in person, at 10 o'clock A.M., October 18, 1888, to Brig.-Gen. John I. Brooke, President of the Retiring Board in session, Omaha, Neb., to give testimony in a case pending before the Board. Upon completion of this duty he will return to his proper station. Par. 9, S. O. 212, A. G. O., September 12, 1888.

First Lieut. Nathan S. Jarvis, Asst. Surgeon, is granted one month's extension of leave of absence, on surgeon certificate of disability. S. O. 210, A. G. O., September 10, 1888.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, the Two Weeks Ending September 10, 1888.

Surgeon George Purviance, to proceed to Fairport, O., Inspector. August 27, 1888.

Surgeon R. D. Murray, to proceed to Key West, Fla. September 5, 1888.

Surgeon W. H. H. Hutton, to take temporary command of Camp Perry, Fla. September 8, 1888.

P. A. Surgeon John Guitéras, to proceed to Jacksonville, Fla., after return from duty, on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.

P. A. Surgeon W. D. Bratton, to proceed to San Francisco, Cal., and report to Surgeon H. W. Sawtelle for duty. September 8, 1888.

P. A. Surgeon Eugene Wasdin, to rejoin his station at Mobile, Ala. September 5, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.

Asst. Surgeon J. B. Fattic, to proceed to Memphis, Tenn. and relieve P. A. Surgeon C. T. Peckham. August 3, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Way Cross, Ga. September 6, 1888.

